

## Curriculum Vita (2005-2022)

**Zbigniew W. Ras**

<http://www.cs.uncc.edu/~ras>

### Educational Background

- National Professorship Title (awarded by the President of Poland) – August, 2012
- D.Sc. (Habilitation), Polish Academy of Sciences, Poland, Computer Science, 2004
- Ph.D., University of Warsaw, Poland, Computer Science
- M.S., University of Warsaw, Poland, Mathematics

### Professional History

#### Affiliations:

- Professor, Dept. of Computer Science, University of North Carolina at Charlotte (1987- present)
- Professor, Institute of Computer Science, Polish-Japanese Academy of Information Technology, Warsaw, Poland (9/01/2005-8/31/2010), (9/01/2016 - present)

#### Previous Affiliations:

- Professor, Institute of Computer Science, Warsaw University of Technology, Warsaw, Poland (9/01/2010 – 6/30/2019)
- Professor/Foreign Associate, Institute of Computer Science, Polish Academy of Sciences, Warsaw, Poland (1994 - 2013)
- Overseas Associate, Centre for AI and Cognate Learning, Univ. of Greenwich, London, UK (1995 - 2001)
- Visiting Professor, Dept. of Computer Science, Warsaw Univ. of Technology (Spring, 1993), (Fall, 2009)
- Associate Professor, Dept. of Computer Science, University of Tennessee at Knoxville (1985 - 1987)
- Associate Professor, Dept. of Computer Science, University of North Carolina at Charlotte (1983 - 1985)
- Visiting Professor, IASI-CNR, Rome, Italy (Summer, 1992)
- Visiting Professor, Dept. of Comp. Science, Univ. of Bonn, Germany (Summer, 1991)
- Visiting Professor, Universitat de les Illes Balears, Palma, Illes Balears, Spain (Summer, 1990, 1991, 1992)
- Summer Associate, Lockheed Missiles & Space Co., Research Laboratory, Palo Alto, CA (6/89 - 9/89)
- Visiting Professor, Dept. of Computer Science, Linkoping University, Sweden (Summer, 1980)
- Visiting Assistant Professor (working under supervision of Prof. [Stan Ulam](#)), Dept. of Mathematics, University of Florida, Gainesville (1978 - 1979)
- Assistant Professor, Dept. of Computer Science, Jagiellonian University, Krakow, Poland (1976 - 1978)
- Assistant Professor, Dept. of Mathematics, University of Warsaw (1976 – 1983)
- Postdoc/Research Associate (working under supervision of Prof. [Samuel Eilenberg](#)), Dept. of Math., Columbia Univ., New York (1975 - 1976)

### Research Interests

Intelligent Information Systems, AI, Data Mining, Actionability, Sentiment Analysis, Music Information Retrieval, Medical Informatics, Business & Art Analytics, Recommender Systems, Flexible Query Answering, Granular Computing, Algebraic Logic

**Invited Presentations at:**

Univ. of Colorado at Boulder, Simon Fraser Univ., Univ. of Montreal, Univ. of Waterloo, Concordia Univ., Univ. of Chicago, Univ. of Kansas, Univ. of Tennessee, Indiana Univ., Univ. of Pennsylvania, IBM - San Jose, Carnegie-Mellon Univ., NYU, SUNY at Stony Brook, Wayne State Univ., Univ. of Bonn (Germany), Univ. of London (England), Univ. of Wisconsin, Humboldt Univ. of Berlin (Germany), Univ. of Florida, Univ. of Roma (Italy), Univ. Palma de Mallorca (Spain), Charles Univ. in Prague (Czech Republic), Univ. of Torino (Italy), Vrije Univ. Brussels (Belgium), Warsaw Univ. of Technology (Poland), Poznan Univ. of Technology (Poland), Univ. of Warsaw (Poland), George Mason Univ., Linkoping Univ. (Sweden), Meiji Univ. (Japan), Waseda Univ. (Japan), Yamaguchi Univ. (Japan), Univ. of Regina (Canada), Univ. of Karlsruhe (Germany), Univ. of Dortmund (Germany), Maebashi Institute of Technology (Japan), Univ. of Lyon (France), etc

**Awards/Recognitions:**

- Best Paper Award at ISMIS 2020 in Gratz, Austria
- Recipient of the Level 3 Team Award in Organizational Achievements, Warsaw University of Technology, 2018
- Distinguished Fellow of the Kosciuszko Foundation Collegium of Eminent Scientists, 2015
- Recipient of the Level 1 Team Award in Educational Achievements, Warsaw University of Technology, 2013
- **Recipient of the Harshini V. de Silva Graduate Mentor Award**, UNC-Charlotte, 2009
- **Finalist of the Bank of America Award for Teaching Excellence**, UNC-Charlotte, 2008
- **Recipient of the COIT Graduate Faculty Excellence in Teaching Award**, UNCC, 2003
- Recipient of the Melting Pot Award, UNC-Charlotte, 2003
- **Recipient of the Alcoa Foundation Outstanding Faculty Award**, UNC-Charlotte, 1999-2000
- Scientific Advisor, The Daniel Group, Charlotte, NC, USA
- Advisory Board Member, Swiss Innovation Valley, Chur, Switzerland
- Scientific Advisor, Complexica, Leading Provider of AI Software, Australia
- Scientific Advisor, Art Preservation Index, Miami, Florida, USA
- Member of the International Advisory Board for Research in AI and Data Processing, Silesian University of Technology, Gliwice, Poland (2021)
- Steering Committee Chair, ISMIS Symposium (since 2000)
- Steering Committee Member, International Rough Set Society (2010-2012)
- Steering Committee Member, WI-TC/WI Conference (since 2015)
- Advisory Board Committee Member, International Rough Set Society (2013-2021)
- Member of the Academy Council, Polish-Japanese Academy of Information Technology, Warsaw, Poland (2020-2024)
- Member of the Senate, Polish-Japanese Academy of Information Technology, Warsaw, Poland (1994-2012)
- Member, Polish Association for Logic and Philosophy of Science, Warsaw, Poland (since 2003)
- Team Member, WIC US Research Center (2007-2019)
- Member, Web Intelligence Consortium (since 2010)

**Editorial Boards:**

- Editor-in-Chief, Journal of Intelligent Information Systems (Springer), (since 1992) /handling close to 1,000 submissions per year/
- Editor-in-Chief, International Journal of Social Network Mining (IJSNM) (InderScience Publishers), (2012-2018)
- Deputy Editor-in-Chief, Fundamenta Informaticae Journal (IOS Press), 1994-2009
- Senior Editor, International Journal of Data Mining, Modelling and Management (InderScience Publishers)
- Associate Editor, Fundamenta Informaticae Journal (IOS Press), (since 2009)
- Editorial Board Member, Journal of Experimental and Theoretical Artificial Intelligence (Taylor & Francis)

- Scientific Committee Member, Advances in Clinical and Experimental Medicine (ACEM Journal), Wroclaw Medical University, 2021-2024
- Editorial Board Member, Journal of Data Mining & Digital Humanities (Episciences)
- Editorial Board Member, Advances in Computer Science Research (Bialystok University of Technology, Poland)

### **Courses Taught (2006-2022):**

Spring 2022

*DSBA/ITCS/ITIS 6162 (Knowledge Discovery in Databases) – 92 students*

Fall 2021

*DSBA/ITCS/ITIS 6162 (Knowledge Discovery in Databases) – 69 students*

*ITCS6150/8150 (Intelligent Systems) – 66 students*

Spring 2021

*DSBA/ITCS/ITIS 6162 (Knowledge Discovery in Databases) – 70 students*

*ITCS3162 (Introduction to Data Mining) – 61 students*

Fall 2020

*ITCS 6150/8150 (Intelligent Systems) – 80 students*

*ITSC 8880 (Individual Study) – 1 student*

Spring 2020

*DSBA/ITCS 6162/8162 (Knowledge Discovery in Databases) - 69 students*

*ITCS 6880 (Individual Study) – 1 student*

*ITSC 8880 (Individual Study) – 1 student*

Fall 2019

*ITCS 6150/8150 (Intelligent Systems) – 75 students*

*ITSC 6162/8162 (Knowledge Discovery in Databases) - 34 students*

Spring 2019

*DSBA/ITCS 6162/8162 (Knowledge Discovery in Databases) - 88 students*

*ITSC 8880 (Individual Study) – 1 student*

Fall 2018

*ITCS 6150/8150 (Intelligent Systems) – 70 students*

*ITSC 6162/8162 (Knowledge Discovery in Databases) - 63 students*

*ITSC*

Spring 2018

*ITCS 6155/8155 (Knowledge-Based Systems) – 14 students*

*ITSC 8665 (Graduate Teaching Seminar) – 8 students*

Fall 2017

*ITCS 6162/8162 (Knowledge Discovery in DB) – 56 students*

*ITSC 8665 Teaching Seminar – 6 students*

*ITSC 6880 Individual Study – 1 student*

Spring 2017

*ITCS 6155/8155 (Knowledge Based Systems) – 47 students*

*ITCS 4650 (Senior Project) – 1 student*

*ITSC 8665 Teaching Seminar – 15 students*

Fall 2016

*ITCS 6162/8162 (Knowledge Discovery in DB) – 48 students*

*ITSC 8665 Teaching Seminar – 14 students*

Spring 2016

*DSBA 6155/8155 (Knowledge Based Systems) – 8 students*

*ITCS 6155 (Knowledge Based Systems) – 62 students*

*ITSC 8665 Teaching Seminar – 8 students*

Fall 2015

*ITCS 6162/8162 (Knowledge Discovery in DB) – 66 students*

*ITSC 8665 Teaching Seminar – 9 students*

Spring 2015

*ITCS 6155/8155 (Knowledge Based Systems) – 69 students*

*ITSC 8665 Teaching Seminar – 11 students*

Fall 2014

*ITCS 6162/8162 (Knowledge Discovery in DB) – 46 students*

*ITSC 8665 Teaching Seminar – 7 students*

*ITCS 6880 Individual Study – 2 students*

Spring 2014

*ITCS 6155/8155 (Knowledge Based Systems) – 48 students*

*ITCS 6880 Individual Study – 2 students*

*ITCS 6162/8162 (Knowledge Discovery in DB) – 43 students*

Fall 2013

*ITCS 6162/8162 (Knowledge Discovery in DB) – 48 students*

*ITCS 6490 Industrial Internship – 1 student*

Spring 2013

*ITCS 6155/8155 (Knowledge Based Systems) – 36 students*

*ITCS 6490 Industrial Internship – 1 student*

*ITCS 6114/8114 (Algorithms & Data Structures) – 42 students*

Fall 2012

*ITCS 6162/8162 (Knowledge Discovery in DB) – 46 students*

*ITCS 6490 Industrial Internship – 1 student*

Spring 2012

*ITCS 6155/8155 (Knowledge Based Systems) – 39 students*

*ITCS 6880 Individual Study: Mining Tinnitus Data for Knowledge – 1 student*

*ITCS 6114/8114 (Algorithms & Data Structures) – 33 students*

Fall 2011

*ITCS 6162/8162 (Knowledge Discovery in DB) – 49 students*

*ITCS 6880 (Knowledge Discovery in Medical Information Systems) – 1 student*

*ITCS 6490 Industrial Internship – 3 students*

Spring 2011

*ITCS 6155/8155 (Knowledge Based Systems) – 45 students*

*ITCS 6265 (Advanced Topics in Knowledge Discovery in DB) – 2 students*

Fall 2010

*ITCS 6162/8162 (Knowledge Discovery in DB) – 49 students*

*ITCS 2175 (Logic and Algorithms) – 33 students*

*ITCS 6161 (Topics in Database Systems) – 1 student*

Spring 2010

*ITCS 6155/8155 (Knowledge Based Systems) – 27 students*

*ITCS 6880 Individual Study – 1 student*

Fall 2009

*On leave at Warsaw University of Technology*

*ITCS 6880 (Individual Study) – 1 student*

Spring 2009

*ITCS 6155/8155 (Knowledge Based Systems) – 43 students*

*ITCS 6490 (Industrial Internship) – 1 student*

Fall 2008

*ITCS 6050/8050 (Topics in Intelligent Systems) – 13 students*

*ITCS 6162/8162 (Knowledge Discovery in DB) – 32 students*

*ITCS 6880/8880 (Individual Study) – 6 students*

Spring 2008

*ITCS 6155/8155 (Knowledge Based Systems) - 25 students*

*ITCS 6880/8880 (Individual Study) – 6 students*

Fall 2007:

*ITCS 2215 (Design & Analysis of Algorithms) – 7 students*

*ITCS 6162/8162 (Knowledge Discovery in DB) – 44 students*

*ITCS 6880/8880 (Individual Study) – 5 students*

Spring 2007:

*ITCS 6155/8155 (Knowledge Based Systems) - 36 students*

*ITCS 3153 (Introduction to Artificial Intelligence) - 7 students*

*Individual Study – 5 students*

Fall 2006:

*ITCS 6162/8162 (Knowledge Discovery in DB) – 31 students*

*Individual Study – 3 students*

Spring 2006:

*ITCS 6155/8155 (Knowledge Based Systems) - 22 students*

*ITCS 2115 (Design Analysis and Algorithms) - 15 students*

## Current PhD Students:



**Aileen Benedict (UNC-Charlotte, GAANN Fellow)**

Thesis Topic: *Recommendation system for typhlo music therapy in rehabilitation work with visually impaired children.*

Passed PhD Qualifier Exam on December 21, 2020



**Sanchari Chatterjee (UNC-Charlotte)**

Research Area: *Data Analytics*

Passed PhD Qualifier Exam on February 22, 2022

/under the supervision of Angelina Tzacheva and Zbigniew Ras/



**Bryan Dobbs (UNC-Charlotte)**

Thesis Topic: *Mining for knowledge in a non-tagged art database*

Passed PhD Proposal on August 17, 2020



**Yuehua Duan (UNC-Charlotte)**

Thesis Topic: *Recommender System for Improving Churn Rate*

Passed PhD Proposal on September 30, 2020



**Anna Gelich (Polish-Japanese Academy of IT)**

Thesis Topic: *What is my art worth in the 21st century*

PhD in Art & Art Conservation

Passed PhD Proposal on June 8, 2021

/under the supervision of Anna Klimczak and Zbigniew Ras/



**Madlen Ivanova (UNC-Charlotte)**

Thesis Topic: *Recommendation system for minimizing the number of hospitalizations for patients with multimorbidity*

Passed PhD Qualifier Exam on December 17, 2020

### **Ph.D. Students graduated under my supervision (2004-2020):**



**Laurel Boykin Powell (UNC-Charlotte), Graduated in Summer, 2020**

/Assistant Professor in Ketner School of Business at Catawba College/

**PhD Thesis:** *Developing a Recommender System for Pricing Contemporary Fine Art.*



**Jaishree Ranganathan (UNC-Charlotte), Graduated in Spring, 2020**

/Assistant Professor in Computer Science Department at Middle Tennessee State University/

**PhD Thesis:** *Emotion Mining from Text and Actionable Pattern Discovery.*

[under the supervision of A. Tzacheva & Z.W. Ras]



**Arunkumar Bagavathi (UNC-Charlotte), Graduated in Fall, 2019**

/Assistant Professor of Computer Science at Oklahoma State University in Stillwater/

**PhD Thesis:** *Distributed Actionable Pattern Mining.*

[under the supervision of A. Tzacheva & Z.W. Ras



**Pierre Arbajian (UNC-Charlotte), Graduated in Spring, 2019**

/AI Systems Architect at Wells Fargo, Charlotte/

**PhD Thesis:** *Disfluent Speech Segments Detection and Remediation*



**Mamoun Al-Mardini (UNC-Charlotte), Graduated in Spring, 2018**

/Assistant Professor in the College of Medicine at the University of Florida, Gainesville/

**PhD Thesis:** *Reduction of Readmissions to Hospitals Based on Actionable Knowledge Discovery and Personalization*



**Katarzyna Tarnowska (UNC-Charlotte), Graduated in Spring, 2018**

/Assistant Professor in the School of Computing at University of North Florida, Jacksonville/

**PhD Thesis:** *Customer Loyalty Improvement Recommender System (CLIRS)*





**Jieyan Kuang (UNC-Charlotte), Graduated in Spring, 2016**

/Vice-President, Bank of America/

**PhD Thesis:** *Hierarchically Structured Recommender System for Improving NPS*



**Konrad Ciecierski (Warsaw University of Technology, Poland), Graduated in Spring, 2014**

/Head of AI & Bioinformatics Research Team at NASK, and Neurophysiological Data Analyst at Maria Sklodowska-Curie Institute of Oncology, Warsaw, Poland/

**PhD Thesis:** *Decision Support System for Surgical Treatment of Parkinson's Disease*

**[The best 2014 PhD thesis in the area of AI in Poland - award given by the Polish Artificial Intelligence Society]**



**Hakim Touati (UNC-Charlotte), Graduated in Spring, 2014**

/Data Scientist at GranData, San Francisco, California/

**PhD Thesis:** *Automated Meta-actions Discovery for Personalized Medical Treatments*



**Amanda Cohen-Mostafavi (UNC-Charlotte), Graduated in Spring, 2014**

/Senior Data Engineer at LexisNexis, Raleigh, North Carolina/

**PhD Thesis:** *Personalized Indexing of Music by Emotions*



**Ayman Hajja (UNC-Charlotte). Graduated in Fall, 2013**

/Assistant Professor of Computer Science at the College of Charleston, SC/

**PhD Thesis:** *Object-Driven and Temporal Action Rules Mining*



**Pamela Liberty Thompson** (UNC-Charlotte), Graduated in Fall, 2011

/Associate Professor at Ketner School of Business, Catawba College/

**PhD Thesis:** *Mining for Knowledge to Build Decision Support System for Diagnosis and Treatment of Tinnitus*



**Elzbieta Kubera** (Polish-Japanese Academy of IT), Graduated in Spring, 2011

/Assistant Professor at Maria Curie-Skłodowska University, Lublin, Poland/

**PhD Thesis:** *The role of temporal attributes in identifying instruments in polytimbral music recordings*



**Wenxin Jiang** (UNC-Charlotte), Graduated in Fall, 2009

/Software Dev Engineer in Gottardo Lab at Fred Hutchinson Cancer Research Center in Seattle/

**PhD Thesis:** *Polyphonic Music Information Retrieval Based on Multi-Label Cascade Classification System*



**Jacek Grekow** (Polish-Japanese Academy of IT), Graduated in Fall, 2009

/Associate Professor at Bialystok University of Technology, **Poland**/

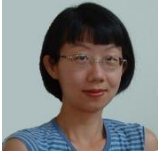
**PhD Thesis:** *Automatic Detection and Visualization of Emotions in Music*



**Rory Lewis** (UNC-Charlotte), Graduated in Spring, 2008

/Associate Professor in Computer Science Dept at the University of Colorado at Colorado Springs/

**PhD Thesis:** *Mining Emotions in a Non-Tagged Music Database*



**Xin Cynthia Zhang (UNC-Charlotte), Graduated in Fall, 2007**

/Associate Professor at **University of North Carolina, Pembroke/**

**PhD Thesis:** *Cooperative Music Retrieval Based on Automatic Indexing of Music by Instruments and Their Types*



**Joon Jung (Seung Hyun Im) (UNC-Charlotte), Graduated in Summer, 2006**

/Patent Examiner at US Patent and Trademark Office (USPTO), U.S. Department of Commerce, Alexandria, Virginia/

**PhD Thesis:** *Data Security and Chase*



**Li-Shiang Tsay (UNC-Charlotte), Graduated in Summer, 2005**

/Associate Professor at NC A&T State University, Greensboro/

**PhD Thesis:** *Discovery of Extended Action Rules (System DEAR)*



**Angelina Tzacheva (UNC-Charlotte), Graduated in Fall, 2004**

/Teaching Associate Professor at UNC-Charlotte/

**PhD Thesis:** *Action rules: Feasibility and Lowest Cost Reclassification*



**Agnieszka Dardzinska (Polish Academy of Sciences), Graduated in Spring, 2004**

/Associate Prof. in the Institute of Mechanics and Informatics & **Vice Chancellor for Education** (Prorektor) **at Bialystok Univ. of Technology**, Poland /

**PhD Thesis:** *Chase Methods Based on Dynamic Knowledge Discovery for Predicting Values in Incomplete Information Systems*

**GRANTS** (Total: \$4,500,669.00; 1,225,000.00KC; 450,000.00PZ):

- [1] Phase II IUCRC UNC Charlotte Site: Center for Visual and Decision Informatics (CVDI), Award No. CNS 1747785; Wenwen Dou (PI); Z.W. Ras, M. Hadzikadic, M. Shehab, J.-C. Thill (Co-PIs), 03/01/18 - 2/28/23; \$499,997.00
- [2] The UNC-Charlotte GAANN Fellowship Program in Computing and Information Systems, M. Shin (PI), Z.W. Ras, M. Shehab (co-PIs), DOE, Award No. P200A180040, 10/01/2018 - 09/30/2022; \$746,250.00
- [3] The UNC-Charlotte GAANN Fellowship Program in Computing and Information Systems, M. Shin (PI), Z.W. Ras, M. Shehab (co-PIs), DOE, Award No. P200A180040-20A, 10/01/2020 - 09/30/2022; \$50,370.00
- [4] I-Corps: Personalized recommender systems based on semantical clustering, Z.W. Ras (PI), NSF, Award No. IIP 1749105, 10/01/2017 - 3/31/2020; \$50,000.00 [10% overhead]
- [5] Readmissions to Hospitals and Patient Safety, Z.W. Ras (PI), J. Studnicki (co-PI), SAS Institute, Proposal No. 15-0645, 9/14/2015 -8/31/2016; \$111,946.00
- [6] Mining Construction Service Data for Actionable Knowledge, Z.W. Ras (PI), The Daniel Group, Awarded to I/UCRC Safety, Security and Rescue Center, Award No. 56C214, 7/01/2015 - 06/30/2017; \$70,200.00 [10% overhead]
- [7] The UNC-Charlotte GAANN Fellowship Program in Computing and Informatics, Z.W. Ras (PI), J. Payton (co-PI), DOE, Award No. P200A130088, 8/16/2014 - 8/15/2017; \$601,075.00 (includes 25% UNC-Charlotte Matching)
- [8] Mining Construction Service Data for Actionable Knowledge, Z.W. Ras (PI), J. Whitmeyer (co-PI), The Daniel Group, Awarded to I/UCRC Safety, Security and Rescue Center, Award No. 54DO40, 7/01/2013-4/30/2016; \$131,902.00 [10% overhead]
- [9] The UNC-Charlotte GAANN Fellowship Program in Computing and Informatics, A. Raja (PI), Z.W. Ras, J. Payton (co-PIs), DOE, Award No. P200A130088, 8/16/2013 - 8/15/2014; \$279,525.00 (includes 25% UNC-Charlotte Matching)
- [10] Normalization and Aggregation of Building Energy Use Data, W. Wu (PI), Z.W. Ras, S. Akella (co-PIs), Duke Energy, 1/01/2011 - 9/30/2011; \$38,000.00
- [11] EAGER: Automatic Indexing of Polyphonic Music by Cascade Classifiers, Z.W. Ras (PI), NSF Award No. IIS 0968647, 5/01/2010 - 4/30/2011; \$35,934.00
- [12] Automatic Indexing of Audio with Timbre Information for Musical Instruments of Definite Pitch, Z.W. Ras (PI), A. Wierzchowska (Co-PI), NSF Award No. IIS-0414815, 1/1/2005 - 12/31/2008; \$315,000.00
- [13] New Tools and Theories for Knowledge Discovery in Databases, Jan Rauch (PI), Z.W. Ras (Co-PI), Award No. ME 913, Awarded by AMVIS Program CONTACT to Univ. of Economics, Prague, Czech Republic, 2007-2011; 1,225,000.00 KC
- [14] Processes for Reaching Consensus using Computer Support & Modern Information Technology, J. Kacprzyk (PI), W. Pedrycz, Z.W. Ras, S. Zadrozny (Co-PIs), Awarded by the Ministry of Science and Higher Education (in Poland) to Systems Research Institute of the Polish Academy of Sciences, Award No. N N519 404734, 2008-2011; 450,000.00 PZ

- [15] 15th International Symposium on Methodologies for Intelligent Systems, Z.W. Ras (PI), DOD/Army, Award No. W911NF-05-1-0103, 1/14/2005-1/13/2006, \$11,103.00
- [16] Knowledge discovery and Chase - Tools to Impute Missing Values in Medical Databases, Faculty Research Enhancement Support Program (FRESH), O. Gurdal (PI), Z.W. Ras (Co-PI), NIH, No. 5G11HD38486-06 (at Johnson C. Smith Univ.), 2005-2006; \$10,000.00
- [17] Academic Research Infrastructure: Equipment for Precision Manufacturing (ARI/MME), NSF Award No. CMMI 9413966; R. Hocken (PI); Z.W. Ras, J. Raja, J. Shelnut, J. Xiao, R. Wilhelm, S. Patterson (Co-PIs); 10/01/1994 - 9/31/1997; \$1,099,000.00
- [18] Contact State Space: Automatic Generation, Reasoning, and Search, NSF Award No. IIS-9700412; Z.W. Ras (PI), J. Xiao, R. Sturges (Co-PIs), 05/15/1997-04/14/2000; \$405,367.00
- [19] POWRE: Visiting Associate Professor at Stanford University, NSF Award No. EIA-9726424; Z.W. Ras (PI), 01/01/1998; \$45,000.00

## **PUBLICATIONS:**

### **Books/Monographs [1986-2022]**

- [61] *Recommender Systems for Medicine and Music*, Z.W. Ras, A. Wiecezorkowska, S. Tsumoto (Eds), Studies in Computational Intelligence, Vol. 946, Springer, 2021  
<https://link.springer.com/book/10.1007/978-3-030-66450-3>
- [60] *Intelligent Systems in Industrial Applications*, M. Stettinger, G. Leitner, A. Felfernig, Z.W. Ras (Eds), Studies in Computational Intelligence, Vol. 949, Springer, 2021  
<https://link.springer.com/book/10.1007/978-3-030-67148-8>
- [59] *ECML PKDD 2020 Workshops in Ghent, Belgium, Proceedings*, Irena Koprinska, et al (Eds), CCIS, Vol. 1323, Springer, 2020  
<https://www.springer.com/gp/book/9783030659646>
- [58] *Foundations of Intelligent Systems, Proceedings of ISMIS'20*, Helic, D., Leitner, G., Stettinger, M., Felfernig, A., Ras, Z.W. (Eds), LNAI, Vol. 12117, Springer, 2020  
<https://www.springer.com/gp/book/9783030594909>
- [57] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2019, ECML-PKDD 2019 Workshop in Wurzburg, Germany*, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI, Vol. 11948, Springer, 2020  
<https://link.springer.com/book/10.1007%2F978-3-030-48861-1>
- [56] *Complex Pattern Mining: New Challenges, Methods and Applications*, A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), Studies in Computational Intelligence, Vol. 880, Springer, 2020  
<https://link.springer.com/book/10.1007%2F978-3-030-36617-9>
- [55] *Recommender System for Improving Customer Loyalty*, Tarnowska, K., Ras, Z.W., Daniel, L., Studies in Big Data, Vol. 55, Springer, 2020  
<https://www.springer.com/gp/book/9783030134372>
- [54] *Foundations of Intelligent Systems, Proceedings of ISMIS'18*, M. Ceci, N. Japkovicz, J. Liu, G.A. Papadopoulos, Z.W. Ras (Eds), LNAI, Vol. 11177, Springer, 2018  
<https://link.springer.com/book/10.1007/978-3-030-01851-1>

- [53] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2017*, ECML-PKDD 2017 Workshop in Skopje, Macedonia, A. Appice, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI, Vol. 10785, Springer, 2018  
<https://link.springer.com/book/10.1007/978-3-319-78680-3>
- [52] *Foundations of Intelligent Systems, Proceedings of ISMIS'17*, M. Kryszkiewicz, A. Appice, D. Slezak, H. Rybinski, A. Skowron, Z.W. Ras (eds.), LNAI, Vol. 10352, Springer, 2017  
<https://link.springer.com/book/10.1007/978-3-319-60438-1>
- [51] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2016*, ECML-PKDD 2016 Workshop in Riva del Garda, Italy, A. Appice, M. Ceci, C. Loglisci, E. Masciari, Z.W. Ras (Eds.), LNAI, Vol. 10312, Springer, 2017  
<https://rd.springer.com/book/10.1007/978-3-319-61461-8>
- [50] *Decision Support System for Diagnosis and Treatment of Hearing Disorders, The Case of Tinnitus*, by K.A. Tarnowska, Z.W. Ras, P.J. Jastreboff, Studies in Computational Intelligence, Vol. 685, Springer, 2017  
<http://www.springer.com/us/book/9783319514628>
- [49] *Proceedings of 2016 IEEE/WIC/ACM International Conference on Web Intelligence (WI'16)*, Z.W. Ras, Y. Li, M. Klusch (Eds.), IEEE Computer Society, 2016  
<http://conferences.computer.org/wi/2016>
- [48] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2015*, ECML-PKDD 2015 Workshop in Porto, Portugal, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI, Vol. 9607, Springer, 2016  
<https://link.springer.com/book/10.1007/978-3-319-39315-5>
- [47] *Foundations of Intelligent Systems, Proceedings of ISMIS'15*, F. Esposito, O. Pivert, M.-S. Hacid, Z.W. Ras (eds.), S. Ferilli, LNAI, Vol. 9384, Springer, 2015  
<https://link.springer.com/book/10.1007%2F978-3-319-25252-0>
- [46] *Proceedings of the Fourth ECML-PKDD 2015 Workshop on New Frontiers in Mining Complex Patterns* (Porto, Portugal), M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), 2015, 199 pages  
<https://webpages.charlotte.edu/ras/NFMCP2015.pdf>
- [45] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2014*, ECML-PKDD 2014 Workshop in Nancy, France, A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI, Vol. 8983, Springer, 2015, 211 pages  
<http://link.springer.com/book/10.1007/978-3-319-17876-9>
- [44] *Proceedings of the Third ECML-PKDD 2014 Workshop on New Frontiers in Mining Complex Patterns* (Nancy, France), A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), 2014, 217 pages  
<https://webpages.charlotte.edu/ras/NFMCP-2014.pdf>
- [43] *Rough Sets and Intelligent Systems Paradigms*, M. Kryszkiewicz, C. Cornelis, D. Ciucci, J. Medina-Moreno, H. Motoda, Z.W. Ras (editors), LNAI, Vol. 8537, Springer, 2014, 394 pages  
<http://link.springer.com/book/10.1007%2F978-3-319-08729-0>
- [42] *Foundations of Intelligent Systems, Proceedings of ISMIS'14*, T. Andreasen, H. Christiansen, J. C. Cubero, Z.W. Ras (eds.), LNAI, Vol. 8502, Springer, 2014, 568 pages  
<http://link.springer.com/book/10.1007/978-3-319-08326-1>

- [41] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2013*, ECML-PKDD 2013 Workshop in Prague, Czech Republic, A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI 8399, Springer, 2014, 261 pages  
<http://www.springer.com/computer/database+management+%26+information+retrieval/book/978-3-319-08406-0>
- [40] *Proceedings of the Second ECML-PKDD 2013 Workshop on New Frontiers in Mining Complex Patterns* (Prague, Czech Republic), A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), 2013, 260 pages  
<https://webpages.charlotte.edu/ras/NFMCP-2013.pdf>
- [39] *New Frontiers in Mining Complex Patterns, Post-proceedings of NFMCP 2012*, ECML/PKDD Workshop in Bristol, UK, A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), LNAI 7765, Springer, 2013, 231 pages  
<http://www.springer.com/computer/database+management+%26+information+retrieval/book/978-3-642-37381-7>
- [38] *Foundations of Intelligent Systems, Proceedings of ISMIS'12*, L. Chen, A. Felfernig, J. Liu, Z.W. Ras (eds.), LNAI, Vol. 7661, Springer, 2012, 468 pages  
<https://link.springer.com/book/10.1007/978-3-642-34624-8>
- [37] *Proceedings of the ECML-PKDD 2012 Workshop on New Frontiers in Mining Complex Patterns* (Bristol, UK), A. Appice, M. Ceci, C. Loglisci, G. Manco, E. Masciari, Z.W. Ras (Eds.), 2012, 205 pages  
<http://www.di.uniba.it/~ceci/micFiles/papers/NFMCP.pdf>
- [36] *Proceedings of 2011 IEEE/WIC/ACM International Conference on Web Intelligence*, B. Benatallah, O. Boissier, M. Papazoglou, Z.W. Ras, M.-S. Hacid (Eds.), IEEE Computer Society, 2011, ISBN 978-0-7695-4513-4  
<http://www.computer.org/csdl/proceedings/wi-iat/2011/index.html>
- [35] *Foundations of Intelligent Systems, Proceedings of ISMIS'11*, M. Kryszkiewicz, H. Rybinski, A. Skowron, Z.W. Ras (editors), LNAI, Vol. 6804, Springer, 2011  
<https://link.springer.com/book/10.1007/978-3-642-21916-0>
- [34] *Advances in Machine Learning I*, J. Koronacki, Z.W. Ras, S. Wierzchon, J. Kacprzyk (editors), Studies in Computational Intelligence, Vol. 262, Springer, 2010, 524 pages  
<http://www.springer.com/engineering/book/978-3-642-05176-0>
- [33] *Advances in Machine Learning II*, J. Koronacki, Z.W. Ras, S. Wierzchon, J. Kacprzyk (editors), Studies in Computational Intelligence, Vol. 263, Springer, 2010, 532 pages  
<http://www.springer.com/engineering/book/978-3-642-05178-4>
- [32] *Advances in Intelligent Information Systems*, Z.W. Ras, L.-S. Tsay (editors), Studies in Computational Intelligence, Vol. 265, Springer, 2010, 374 pages  
<http://www.springer.com/engineering/book/978-3-642-05182-1>
- [31] *Advances in Music Information Retrieval*, Z.W. Ras, A. Wieczorkowska (editors), Studies in Computational Intelligence, Vol. 274, Springer, 2010, 420 pages  
<http://www.springer.com/engineering/book/978-3-642-11673-5>
- [30] *Advances in Data Management*, Z.W. Ras, A. Dardzinska (editors), Studies in Computational Intelligence, Vol. 223, Springer, 2009, 398 pages  
<http://www.springer.com/engineering/book/978-3-642-02189-3>

- [29] *Advances in Information & Intelligent Systems*, Z.W. Ras, W. Ribarsky (editors), Studies in Computational Intelligence, Vol. 251, Springer, 2009, 352 pages  
<http://www.springer.com/engineering/book/978-3-642-04140-2>
- [28] *Foundations of Intelligent Systems, Proceedings of ISMIS'09*, J. Rauch, Z.W. Ras, P. Berka, T. Elomaa (editors), LNAI, Vol. 5722, Springer, 2009, 624 pages  
<https://link.springer.com/book/10.1007%2F978-3-642-04125-9>
- [27] *Mining Complex Data*, D.A. Zighed, S. Tsumoto, Z.W. Ras, H. Hacid (editors), Studies in Computational Intelligence, Vol. 165, Springer, 2009, 300 pages  
<http://www.springer.com/engineering/book/978-3-540-88066-0>
- [26] *Foundations of Intelligent Systems, Proceedings of ISMIS'08*, A. An, S. Matwin, Z.W. Ras, D. Slezak (editors), LNAI, Vol. 4994, Springer, 2008, 653 pages  
<https://link.springer.com/book/10.1007/978-3-540-68123-6>
- [25] *Mining Complex Data*, Z.W. Ras, S. Tsumoto, D.A. Zighed (editors), Post-Proceedings of 2007 ECML/PKDD Third International Workshop (MCD 2007), LNAI, Vol. 4944, Springer, 2008, 265 pages  
<http://www.springeronline.com/978-3-540-68415-2>
- [24] *Foundations of Intelligent Systems, Proceedings of ISMIS'06*, F. Esposito, Z.W. Ras, D. Malerba, G. Semeraro (editors), LNAI, No. 4203, Springer, 2006, 767 pages  
<https://link.springer.com/book/10.1007/11875604>
- [23] *Computational Intelligence in Data Mining, Proceedings of 2005 IEEE ICDM Workshop in Houston, Texas*, F. Berzal, J.C. Cubero, Z.W. Ras, T. Sudkamp, R. Yager (editors), Published by Math. Dept., Saint Mary's Univ., Nova Scotia, Canada, 2005, 90 pages
- [22] *Mining Complex Data, Proceedings of 2005 IEEE ICDM Workshop in Houston, Texas*, Z.W. Ras, S. Tsumoto, D.A. Zighed (editors), Published by Math. Dept., Saint Mary's Univ., Nova Scotia, Canada, 2005, 112 pages
- [21] *Foundations of Intelligent Systems, Proceedings of ISMIS'05*, M.-S. Hacid, N. Murray, Z.W. Ras, S. Tsumoto (editors), LNAI, No. 3488, Springer, 2005  
<https://link.springer.com/book/10.1007/b136302>
- [20] *Foundations of Intelligent Systems, Proceedings of ISMIS'03*, N. Zhong, Z.W. Ras, S. Tsumoto, E. Suzuki (editors), LNAI, No. 2871, Springer, 2003, 693 pages  
<https://link.springer.com/book/10.1007/b14019>
- [19] *Foundations of Intelligent Systems, Proceedings of ISMIS'02*, M.-S. Hacid, Z.W. Ras, D. Zighed, Y. Kodratoff (editors), LNAI, No. 2366, Springer, 2002, 614 pages  
<https://link.springer.com/book/10.1007/3-540-48050-1>
- [18] *Foundations of Intelligent Systems, Proceedings of ISMIS'00*, Z.W. Ras, S. Ohsuga (editors), Lecture Notes in Artificial Intelligence, No. 1932, Springer, 2000, 644 pages  
<https://link.springer.com/book/10.1007/3-540-39963-1>
- [17] *Foundations of Intelligent Systems, Proceedings of ISMIS'99*, Z.W. Ras, A. Skowron (editors), LNAI, No. 1609, Springer-Verlag, 1999, 674 pages  
<https://link.springer.com/book/10.1007%2FBFb0095085>
- [16] *Intelligent Information Systems*, M. Klopotek, M. Michalewicz, Z.W. Ras (editors), Proceedings of the Workshop held in Malbork, Poland, 15-19 June, 1998, ICS PAS, Warsaw, Poland, 404 pages



- [15] *Intelligent Information Systems*, M. Klopotek, M. Michalewicz, Z.W. Ras (editors), Proceedings of the Workshop held in Zakopane, Poland, 9-13 June, 1997, ICS PAS, Warsaw, Poland, 310 pages  
[http://www.bookfinder.com/dir/i/Intelligent\\_Information\\_Systems-Proceedings\\_of\\_the\\_Workshop\\_Held\\_in\\_Zakopane,/8390082071/](http://www.bookfinder.com/dir/i/Intelligent_Information_Systems-Proceedings_of_the_Workshop_Held_in_Zakopane,/8390082071/)
- [14] *Foundations of Intelligent Systems, Proceedings of ISMIS'97*, Z.W. Ras, A. Skowron (editors), LNAI, No. 1325, Springer, 1997, 631 pages  
<https://link.springer.com/book/10.1007/3-540-63614-5>
- [13] *Intelligent Information Systems*, M. Michalewicz, Z.W. Ras (editors), Proceedings of the Workshop held in Deblin, Poland, 2-5 June, 1996, ICS PAS, Warsaw, Poland, 227 pages  
[http://www.bookfinder.com/dir/i/Intelligent\\_Information\\_Systems-Proceedings\\_of\\_the\\_Workshop\\_Held\\_in\\_Deblin,/8390082063/](http://www.bookfinder.com/dir/i/Intelligent_Information_Systems-Proceedings_of_the_Workshop_Held_in_Deblin,/8390082063/)
- [12] *Foundations of Intelligent Systems*, Proceedings of ISMIS'96, Z.W. Ras, M. Michalewicz (editors), LNAI, No. 1079, Springer, 1996, 664 pages  
<https://link.springer.com/book/10.1007/3-540-61286-6>
- [11] *Intelligent Information Systems*, M. Dabrowski, M. Michalewicz, Z.W. Ras (editors), Proceedings of the Workshop held in Augustow, Poland, 5-9 June, 1995, ICS PAS, Warsaw, Poland, 360 pages
- [10] *Methodologies for Intelligent Systems, Proceedings of ISMIS'94*, Z.W. Ras, M. Zemankova (editors), LNAI, No. 869, Springer, 1994, 613 pages  
<https://link.springer.com/book/10.1007/3-540-58495-1>
- [9] *Intelligent Information Systems*, M. Dabrowski, M. Michalewicz, Z.W. Ras (editors), Proceedings of the Workshop held in Wigry, Poland, 6-10 June, 1994, ICS PAS, Warsaw, Poland, 473 pages
- [8] *Methodologies for Intelligent Systems, Proceedings of ISMIS'93*, J. Komorowski and Z.W. Ras (editors), LNAI, Vol 689, Springer, 1993  
<https://link.springer.com/book/10.1007/3-540-56804-2>
- [7] *Methodologies for Intelligent Systems, Proceedings of ISMIS'91*, Z.W. Ras and M. Zemankova (editors), LNAI, Vol. 542, Springer, 1991  
Proceedings of the Sixth International Symposium on Methodologies for Intelligent Systems (Poster Session), Oak Ridge National Laboratory, 1991  
<https://link.springer.com/book/10.1007/3-540-54563-8>
- [6] *Intelligent Systems, State of the Art and Future Directions*, Z.W. Ras, M. Zemankova (Eds), Ellis Horwood Series in AI, 1990
- [5] *Methodologies for Intelligent Systems, Vol. 5*, Z.W. Ras, M. Zemankova, M. Emrich (Eds), North Holland, 1990
- [4] *Methodologies for Intelligent Systems, Vol. 4*, Z.W. Ras (Ed), North Holland, 1989  
<https://dl.acm.org/doi/book/10.5555/534692>
- [3] *Methodologies for Intelligent Systems, Vol. 3*, Z.W. Ras, L. Saitta (Eds), North Holland, 1988
- [2] *Methodologies for Intelligent Systems, Vol. 2*, Z.W. Ras, M. Zemankova (Eds), North Holland, 1987

[1] *Proceedings of ACM/SIGART International Symposium on Methodologies for Intelligent Systems*, Z.W. Ras, M. Zemankova (Eds), ACM SIGART, 1986  
<https://dl.acm.org/doi/proceedings/10.1145/12808>

### **Journal Special Issues:**

[15] *Model and Data Engineering, MEDI 2016 Special Issue*, Ladjel Bellatreche, Z.W. Ras (Eds.), Fundamenta Informaticae Journal, IOS Press, No. 162, 2018

[14] *Warehousing and OLAPing Complex, Spatial and Spatio-Temporal Data*, Special Issue, A. Cuzzocrea, Z.W. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 132, No. 2., 2014, 140 pages

[13] *Concept Lattices and Their Applications*, Special Issue, M. Kryszkiewicz, S. Obiedkov, Z.W. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 115, No. 4., 2012

[12] *Interesting Knowledge Mining*, Special Issue, Z.W. Ras, L.-S. Tsay (editors), International Journal of Data Mining, Modelling and Management, InderScience Publishers, Vol. 4, No. 3, 2012

[11] *Methodologies for Intelligent Systems*, Special Issue, P. Berka, T. Elomaa, J. Rauch, Z. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 99, No.2., 2010, 125-246

[10] *Special Issue on Knowledge Discovery*, Z.W. Ras, A. Dardzinska (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 78, No. 4, 2007

[9] *Special Issue on Knowledge Discovery*, Z.W. Ras (editor), Journal of Experimental and Theoretical Artificial Intelligence, Taylor & Francis, Vol. 17, No. 1-2, 2005, 162 pages

[8] *Special Issue on Knowledge Discovery*, Z.W. Ras (editor), International Journal of Intelligent Systems, Wiley, Vol. 20, 2005, 669-787

[7] *Music Information Retrieval*, Special Issue, A. Wieczorkowska, Z.W. Ras (editors), Journal of Intelligent Information Systems, Kluwer, Vol. 21, No. 1, 2003, 88 pages

[6] *Web Intelligence*, Special Issue, J. Liu, N. Zhong, Y. Yao, Z.W. Ras (editors), Journal of Intelligent Information Systems, Vol. 20, No. 1, Kluwer, 2003, 99 pages

[5] *Intelligent Systems*, Special Issue, Z.W. Ras, E. El-Kwae (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 47, No. 1/2, 2001, 188 pages

[4] *To the memory of Prof. Cecylia Rauszer, Special Issue*, J. Komorowski, Z.W. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 32, No. 2, 1997, 105-191

[3] *Methodologies for Intelligent Information Systems*, Special Issue, Z.W. Ras, A. Skowron (editors), Journal of Intelligent Information Systems, Kluwer, Vol. 14, No. 2/3, 2000, pp. 83-261

[2] *Methodologies for Intelligent Systems*, Special Issue, J. Komorowski, Z.W. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 21, No. 3, 1994, pp. 161-253

[1] *Intelligent Information Systems*, Special Issue, M. Michalewicz, Z.W. Ras (editors), Fundamenta Informaticae Journal, IOS Press, Vol. 30, No. 3/4, 1997, 227-402

## Papers 2010-2022

### Journal Papers (2010-2022)

[21] "*Developing Customer Attrition Management System: Discovering Action Rules for Making Recommendations to Retain Customers*", Duan, Y., Ras, Z.W., **Applied Intelligence (APIN)**, Springer, June, 2022 (**Impact Factor: 5.086**)

[20] "*On art authentication and the Rijksmuseum challenge: A residual neural network approach*", Dobbs, T., Ras, Z.W., **Expert Systems with Applications**, Vol. 200, Elsevier, August 15, 2022 (**Impact Factor: 6.954**)  
<https://doi.org/10.1016/j.eswa.2022.116933>

[19] "*Reduction of Hospital Readmissions*", Ras, Z.W., **Advances in Clinical and Experimental Medicine (ACEM Journal)**, Wroclaw Medical University, Vol. 31, No. 1, 2022 (**Impact Factor: 1.727**) (Open Access)  
<https://advances.umw.edu.pl/pdf/2022/31/1/5.pdf>

[18] "*Recommendation System for Improving Churn Rate based on Action Rules and Sentiment Mining*", Duan, Y., Ras, Z.W., **International Journal of Data Mining, Modelling and Management**, InderScience Publishers, Vol. 14, No. 4, 2022  
<https://doi.org/10.1504/IJMMMM.2022.10041468>

[17] "*How to raise artwork prices using action rules, personalization, and artwork visual features*", Powell, L., Gelich, A., Ras, Z.W., in SI: Methodologies for Intelligent Systems, (Eds. M. Stettinger, G. Leitner), **Journal of Intelligent Information Systems**, Vol 57, No. 3, Springer, 2021, 583-599 (**Impact Factor: 1.89**)  
<https://doi.org/10.1007/s10844-021-00660-x>

[16] "*Jumping into the artistic deep end: building the catalogue raisonne*", Doobs, T., Benedict, A., Ras, Z.W., in SI: Born Digital - Shedding Light into the Darkness of Digital Culture, (Ed. Larry Stapleton), **AI & SOCIETY**, Springer, 2022 (**Impact Factor: 1.438**) (Open Access)  
<https://doi.org/10.1007/s00146-021-01370-2>

[15] "*NLP-based Customer Loyalty Improvement Recommender System (CLIRS2)*", K.A. Tarnowska, Z. Ras, in SI: Feature Papers 2020, **Big Data and Cognitive Computing Journal**, MDPI Publishers, 5(1):4, 2021 (**Open Access**)  
<https://www.mdpi.com/2504-2289/5/1/4>

[14] "*Discovering primary medical procedures and their associations with other procedures in HCUP data*", M.T. Mardini, Z.W. Ras, **Information Systems Frontiers**, Springer, 2020 (**Impact Factor: 6.191**)  
<https://link.springer.com/article/10.1007/s10796-020-10058-9>

[13] "*Sentiment Analysis of Customer Data*", K. Tarnowska, Z.W. Ras, in **Web Intelligence Journal**, Vol. 17, Issue 4, IOS Press, 2019, 343-363  
<https://content.iospress.com/articles/web-intelligence/web190423>

[12] "*Effect of Speech Segment Samples Selection in Stutter Block Detection and Remediation*", P. Arbajian, A. Hajja, Z.W. Ras, A. Wiczorkowska, **Journal of Intelligent Information Systems**, Springer, Vol. 53, Issue 2, 2019, 241-264 (**Impact Factor: 1.89**)  
<https://link.springer.com/article/10.1007/s10844-019-00546-z>

- [11] "Extraction of actionable knowledge to reduce hospital readmissions through patients personalization", M.T. Mardini, Z.W. Ras, **Information Sciences Journal**, Elsevier, Vol. 485, 2019, 1-17 (**Impact factor: 6.975**)  
<https://www.sciencedirect.com/journal/information-sciences/vol/485/suppl/C>
- [10] "DBS decision support system based on analysis of microelectrode recorded signals as a useful tool in detection of the most beneficial electrode localization during DBS implantation", Szlufik, S., K. Ciecierski, R. Rola, T. Mandat, P. Nauman, Z. Ras, A. Przybyszewski, A. Friedman, D. Kozirowski, in **Brain Stimulation**, Elsevier, Vol. 8, No. 2, 2015, 396-397 (**Impact Factor: 6.56**)  
[http://www.brainstimjrnl.com/article/S1935-861X\(15\)00690-7/pdf](http://www.brainstimjrnl.com/article/S1935-861X(15)00690-7/pdf)
- [9] "Computer Aided Subthalamic Nucleus (STN) Localization during Deep Brain Stimulation (DBS) Surgery in Parkinson's Patients", Ciecierski, K., Mandat, T., Rola, R., Ras, Z.W., Przybyszewski, A.W., **Annales Academiae Medicae Silesiensis**, Vol. 68, No. 5, 2014, 275-283  
<http://webpages.uncc.edu/ras/Papers/AAMS-Ciecierski.pdf>
- [8] "Hierarchical Object-driven Action Rules", A. Hajja, Z.W. Ras, A. Wiczorkowska, Special issue on Mining Complex Patterns, A. Appice et al (Eds), **Journal of Intelligent Information Systems**, Springer, Vol. 42, No. 2, 2014, 207-232 (**Impact Factor: 1.89**)  
<http://webpages.uncc.edu/ras/Hajja-2014.pdf>
- [7] "Foundations of automatic system for intrasurgical localization of Subthalamic Nucleus in Parkinson patients", K. Ciecierski, Z.W. Ras, A. Przybyszewski, in **Web Intelligence and Agent Systems, International Journal**, IOS Press, Vol. 12, No. 1, 2014, 63-82  
[http://webpages.uncc.edu/ras/WIA286\\_Ciecierski\\_Ras.pdf](http://webpages.uncc.edu/ras/WIA286_Ciecierski_Ras.pdf)
- [6] "Multi-Label Automatic Indexing of Music by Cascade Classifiers", W. Jiang, Z.W. Ras, in **Web Intelligence and Agent Systems, International Journal**, IOS Press, Vol. 11, No. 2, 2013, 149-170  
<http://webpages.uncc.edu/ras/WIAS-Jiang-Ras.pdf>
- [5] "Mining Meta-actions for Action Rules Reduction", H. Touati, Z.W. Ras, **Fundamenta Informaticae Journal**, IOS Press, Vol. 127, No. 1-4, 2013, 225-240 (**Impact Factor: 1.333**)  
<https://doi.org/10.3233/FI-2013-906>
- [4] "Personalized Action Rules for Side Effects Object Grouping", H. Touati, J. Kuang, A. Hajja, Z.W. Ras, in the Special Issue on "Knowledge Discovery", G. Wang (Ed.), **International Journal of Intelligence Science (IJIS)**, Scientific Research, Vol. 3, No. 1A, 2013, 24-33 (**Open Access**)  
[http://webpages.uncc.edu/ras/Papers/IJIS\\_Hakim.pdf](http://webpages.uncc.edu/ras/Papers/IJIS_Hakim.pdf)
- [3] "From Data to Classification Rules and Actions", Z. Ras, A. Dardzinska, **International Journal of Intelligent Systems**, Wiley, Vol. 26, Issue 6, 2011, 572-590 (**Impact Factor: 10.3**)  
<http://webpages.uncc.edu/ras/Ras-Aga-IJIS.pdf>
- [2] "How to Support Consensus Reaching using Action Rules: a Novel Approach", J. Kacprzyk, S. Zadrozny, Z.W. Ras, **International Journal of Uncertainty, Fuzziness and Knowledge Based Systems**, World Scientific, No. 18, Issue 4, 2010, 451-470 (**Impact Factor: 1.518**)  
<http://webpages.uncc.edu/ras/Paper-Janusz.pdf>
- [1] "Action Rule Discovery from Incomplete Data", S. Im, Z.W. Ras, H. Wasyluk, in **Knowledge and Information Systems Journal (KAIS)**, Vol. 25, No. 1, Springer, 2010, 21-33 (**Impact Factor: 2.822**)  
<http://webpages.uncc.edu/ras/Papers/KAIS.pdf>

## Book Chapters (2010-2022)

[27] *"High-performance Actionable Knowledge Miner for Boosting Business Revenue"*, K. Tarnowska, A. Bagavathi, Z.W. Ras, in *Emerging Intelligent Decision Management Systems: Applications and Challenges*, (Eds. P. Pattnaik, H. Das), Wiley, 2023, will appear

[26] *"Customer Churn Reduction Based on Action Rules and Collaboration"*, Y. Duan, Z.W. Ras, in *Encyclopedia of Data Science and Machine Learning*, (Ed. John Wang), IGI Global, June, 2022

[25] *"Machine Learning Approach to Art Authentication"*, T. Dobbs, Z.W. Ras, in *Encyclopedia of Data Science and Machine Learning*, (Ed. John Wang), IGI Global, June, 2022

[24] *"Personalizing Patients to Enable Shared Decision Making"*, M. Mardini, A. Hashky, Z.W. Ras, in *Recommender Systems for Medicine and Music*, (Eds. Z.W. Ras, A. Wiczorkowska, S. Tsumoto), *Studies in Computational Intelligence*, Vol. 946, Springer, 2021, 75-90

[23] *"Recommendation Systems in Healthcare"*, M. Ivanova, Z.W. Ras, in *Recommender Systems for Medicine and Music*, (Eds. Z.W. Ras, A. Wiczorkowska, S. Tsumoto), *Studies in Computational Intelligence*, Vol. 946, Springer, 2021, 1-11

[22] *"Art Innovative Systems for Value Tagging"*, L. Powell, A. Gelich, Z.W. Ras, in *Encyclopedia of Organizational Knowledge, Administration, and Technologies*, Chapter 80, IGI Global, 2020

[21] *"Applying Analytics to Artist Provided Text to Model Prices of Fine Art"*, L. Powell, A. Gelich, Z.W. Ras, in *Complex Pattern Mining: New Challenges, Methods and Applications*, *Studies in Computational Intelligence*, Vol. 880, Springer, 2020, 189-211

[20] *"Segment-Removal Based Stuttered Speech Remediation"*, P. Arbajian, A. Hajja, Z.W. Ras, A. Wiczorkowska, in *"New Frontiers in Mining Complex Patterns"*, *Post-Proceedings of NFMCP 2017, ECML/PKDD Workshop in Macedonia, LNAI*, Vol. 10785, Springer, 2018, 16-34

[19] *"Can we build recommender system for artwork evaluation?"*, C. Pawlowski, A. Gelich, Z.W. Ras, in *"Intelligent Methods and Big Data in Industrial Applications"*, *Studies in Big Data*, Vol. 40, Springer, 2018, 41-52

[18] *"Visual Analysis of Relevant Features in Customer Loyalty Improvement Recommendation"*, K. Tarnowska, Z.W. Ras, L. Daniel, D. Fowler, in *Advances in Feature Selection for Data and Pattern Recognition*, *Intelligent Systems Reference Library*, Vol. 138, Springer, 2017, 269-293

[17] *"Mining for Actionable Knowledge in Tinnitus Datasets"*, K.A. Tarnowska, Z.W. Ras, P.J. Jastreboff, in *"Thriving Rough Sets"*, (Eds G. Wang, et al.), *Studies in Computational Intelligence*, Vol. 708, Chapter 18, Springer, 2017, 367-396

[16] *"Predicting the primary medical procedure through clustering of patients' diagnoses"*, M. Al-Mardini, A. Hajja, Z.W. Ras, L. Clover, D. Olaleye, in *"New Frontiers in Mining Complex Patterns"*, *Post-proceedings of NFMCP 2016, ECML/PKDD Workshop in Riva del Garda, Italy, LNAI*, Vol. 10312, Springer, 2017, 117-131

[15] *"Predicting Negative Side Effects of Surgeries Through Clustering"*, Hajja, A., Touati, H., Ras, Z.W., Studnicki, J., Wiczorkowska, A., in *"New Frontiers in Mining Complex Patterns"*, *Post-proceedings of NFMCP 2014, ECML/PKDD Workshop, Nancy, France, LNAI*, Vol. 8983, Springer, 2015, 41-55

- [14] *"Meta-Actions as a Tool for Action Rules Evaluation"*, Touati, H., Ras, Z.W., Studnicki, J., in *Feature Selection for Data and Pattern Recognition*, U. Stanczyk and L.C. Jain (Eds.), *Studies in Computational Intelligence*, Chapter 9, Vol. 584, Springer, 2014, 177-197
- [13] *"From Personalized to Hierarchically Structured Classifiers for Retrieving Music by Mood"*, Mostafavi, A., Ras, Z.W., Wieczorkowska, A., in *"New Frontiers in Mining Complex Patterns"*, Post-proceedings of NFMCP 2013, ECML/PKDD Workshop, Prague, Czech Republic, LNAI, Vol. 8399, Springer, 2014, 231-245
- [12] *"Object-driven Action Rules"*, A. Hajja, Z.W. Ras, *Encyclopedia of Information Science and Technology*, Chapter 114, IGI Global, 2014, 1197-1206
- [11] *"Personalized Meta Actions"*, H. Touati, Z.W. Ras, in *Encyclopedia of Business Analytics and Optimization*, Vol. IV, John Wang (Ed.), IGI Global, 2014, 1856-1865
- [10] *"Discovering action rules from action reducts and their application to failed states data"*, E. Kielak, Z.W. Ras, *Jubilee monograph devoted to A. Wakulicz-Deja*, (Ed. Z. Wrobel), Silesian University of Technology Press, 2013, 143-153
- [9] *"Time variability-based hierarchic recognition of multiple musical instruments in recordings"*, E. Kubera, A. Wieczorkowska, Z.W. Ras, in *Rough Sets and Intelligent Systems - Professor Zdzislaw Pawlak in Memoriam*, *Intelligent Systems Reference Library (ISRL)*, Vol. 43, Springer, 2013, 347-362
- [8] *"Supporting Consensus Reaching Processes under Fuzzy Preferences and a Fuzzy Majority via Linguistic Summaries and Action Rules"*, S. Zadrozny, J. Kacprzyk, Z.W. Ras, in *Consensual Processes 2011*, *Studies in Fuzziness and Soft Computing*, Vol. 267, Springer, 2011, 289-314
- [7] *"Mining tinnitus data based on clustering and new temporal features"*, X. Zhang, P. Thompson, Z.W. Ras, P. Jastreboff, in *Learning Structure and Schemas from Documents*, M. Biba, F. Xhafa (Eds.), *Studies in Computational Intelligence*, Vol. 375, Springer, 2011, 227-246
- [6] *"Multiple Classifiers for Different Features in Timbre Estimation"*, W. Jiang, X. Zhang, A. Cohen, Z.W. Ras, in *Advances in Intelligent Information Systems*, Ras, Z.W., Tsay, L.-S. (Eds), *Studies in Computational Intelligence*, Vol. 265, Springer, 2010, 335-356
- [5] *"Clustering Driven Cascade Classifiers for Multi-Indexing of Polyphonic Music by Instruments"*, W. Jiang, Z.W. Ras, A. Wieczorkowska, in *Advances in Music Information Retrieval*, *Studies in Computational Intelligence*, Vol. 274, Springer, 2010, 19-38
- [4] *"Emotion Based MIDI Files Retrieval System"*, J. Grekow, Z.W. Ras, in *Advances in Music Information Retrieval*, *Studies in Computational Intelligence*, Vol. 274, Springer, 2010, 261-284
- [3] *"Action Rules approach to solving diagnostic problems in clinical medicine"*, H.A. Wasyluk, Z.W. Ras, in *Decision Support Systems*, InTech Education and Publishing, 2010, 99-106
- [2] *"Identification of Musical Instruments by Features Describing Sound Changes in Time"*, E. Kubera, Z.W. Ras, in *Advances in Intelligent Information Systems*, Ras, Z.W., Tsay, L.-S. (Eds), *Studies in Computational Intelligence*, Vol. 265, Springer, 2010, 357-366
- [1] *"Cascade Classifiers for Hierarchical Decision Systems"*, Z.W. Ras, A. Dardzinska, W. Jiang, in *Advances in Machine Learning I*, J. Koronacki et al (Eds.), *Studies in Computational Intelligence*, Vol. 262, Springer, 2010, 247-256

## Conference Proceedings (2010-2021)

[32] *"Emotion Mining and Attribute Selection for Actionable Recommendations to Improve Customer Satisfaction"*, J. Ranganathan, P. Rajurkar, A. Tzacheva, Z.W. Ras, Proceedings of ICKDM 2021: 15'th International Conference on Knowledge Discovery and Management, Amsterdam, Netherlands, February 08-09, 2021

[31] *"The Construction of Action Rules to Raise Artwork Prices"*, L. Powell, A. Gelich, Z.W. Ras, in Proceedings of 2020 International Symposium on Methodologies for Intelligent Systems (ISMIS'20), Graz, Austria, LNAI, Vol. 12117, Springer, 2020, 11-22 (**best paper award**)

[30] *"Developing Pricing Models for Online Art Sales Using Text Analytics"*, L. Powell, A. Gelich, Z.W. Ras, in Proceedings of 2019 International Joint Conference on Rough Sets (IJCRS'19), Debrecen, Hungary, LNAI, Vol. 11499, Springer, 2019, 480-494

[29] *"Actionable Pattern Mining - a Scalable Data Distribution Method based on Information Granules"*, A. Bagavathi, A. Tripathi, A. Tzacheva, Z.W. Ras, in Proceedings of the 17th IEEE International Conference on Machine Learning and Applications (ICMLA 2018), IEEE, Orlando, Florida, 2018, 32-39

[28] *"From Knowledge Discovery to Customer Attrition"*, K. Tarnowska, Z.W. Ras, in "Foundations of Intelligent Systems, Proceedings of ISMIS 2018", M. Ceci, et al. (Eds), LNAI, Vol. 11177, Springer, 2018, 417-425

[27] *"Multipurpose Web-Platform for Labeling Audio Segments Efficiently and Effectively"*, A. Hajja, G. Hiers, P. Arbajian, Z.W. Ras, A. Wiczorkowska, in "Foundations of Intelligent Systems, Proceedings of ISMIS 2018", M. Ceci, et al. (Eds), LNAI, Vol. 11177, Springer, 2018, 179-188

[26] *"SARGS method for Distributed Actionable Pattern Mining using Spark"*, Bagavathi, A., Mummoju, P., Tarnowska, K., Tzacheva, A., Ras, Z.W., in IEEE Big Data Proceedings: 4th International Workshop on Pattern Mining and Application of Big Data (BigPMA 2017), IEEE, Boston, MA, 2017, 4272-4281

[25] *"User Friendly NPS-based Recommender System for driving Business Revenue"*, (Invited Paper), Z.W. Ras, K. Tarnowska, J. Kuang, L. Daniel, D. Fowler, Proceedings, International Joint Conference on Rough Sets (IJCRS'17), LNCS, Vol. 10313, Springer, 2017, 34-48

[24] *"A Supervised Model for Predicting the risk of Mortality and Hospital Readmissions for Newly Admitted Patients"*, M. Al-Mardini, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'17 in Warsaw, Poland, LNAI, Vol. 10352, Springer, 2017, 29-36

[23] *"Reduction of Readmissions to Hospitals Based on Actionable Knowledge Discovery and Personalization"*, (Invited Paper), M. Al-Mardini, A. Hajja, Z.W. Ras, L. Clover, D. Olaleye, Y. Park, J. Paulson, Y. Xiao, in Beyond Databases Architectures and Structures - BDAS 2016 (Eds. S. Kozielski, et al.), Communications in Computer and Information Science, Vol. 613, Springer, 2016, 39-55

[22] *"In Search for Best Meta-Actions to Boost Businesses Revenue"*, Kuang, J., Ras, Z.W., in Proceedings of the Conference on Flexible Query Answering Systems 2015, in Krakow, Poland, Advances in Intelligent Systems and Computing, Vol. 400, Springer, 2015, 431-443

[21] *"Frequency based mapping of the STN borders"*, Ciecierski, A., Ras, Z.W., Przybyszewski, A., in Foundations of Intelligent Systems, Proceedings of ISMIS 2015 in Lyon, France, LNAI, Vol. 9384, Springer, 2015, 150-159

- [20] *"Personalized Meta-Action Mining for NPS Improvement"*, Kuang, J., Ras, Z.W., Daniel, A., in *Foundations of Intelligent Systems, Proceedings of ISMIS 2015 in Lyon, France*, LNAI, Vol. 9384, Springer, 2015, 73-80
- [19] *"Hierarchical Agglomerative Method for Improving NPS"*, Kuang, J., Ras, Z.W., Daniel, A., in *Proceedings of the International Conference on Pattern Recognition and Machine Intelligence*, LNCS, Vol. 9124, Springer, 2015, 54-64
- [18] *"Side Effects Analysis Based on Action Sets for Medical Treatments"*, Touati, H., Ras, Z.W., Studnicki, J., Wieczorkowska, A., in *Proceedings of the Third ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, Nancy, France, September 15-19, 2014, 172-183
- [17] *"Intraoperative Decision Making with Rough Set Rules for STN DBS in Parkinson Disease"*, Ciecierski, K., Ras, Z.W., Przybyszewski, A.W., in *International Conference on Brain Informatics and Health*, Warsaw, Poland, LNCS, Vol. 8609, Springer, 2014, 323-334
- [16] *"Hierarchically Structured Recommender System for improving NPS of a company"*, Kuang, J., Daniel, A., Johnston, J., Ras, Z.W., in *Proceedings of RSCTC 2014*, in Granada, Spain, LNCS, Vol. 8536, Springer, 2014, 347-357
- [15] *"Spike Sorting based upon PCA over DWT Frequency Band Selection"*, Ciecierski, A., Ras, Z.W., Przybyszewski, A., in *Foundations of Intelligent Systems, Proceedings of ISMIS 2014 in Roskilde, Denmark*, LNAI, Vol. 8502, Springer, 2014, 154-163
- [14] *"Mining Surgical Meta-Actions Effects with Variable Diagnoses Number"*, Touati, H., Ras, Z.W., Studnicki, J., Wieczorkowska, A., in *Foundations of Intelligent Systems, Proceedings of ISMIS 2014 in Roskilde, Denmark*, LNAI, Vol. 8502, Springer, 2014, 254-263
- [13] *"Developing Personalized Classifiers for Retrieving Music by Mood"*, Mostafavi, A., Ras, Z.W., Wieczorkowska, A., in *Proceedings of the Second ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, Prague, Czech Republic, September 27, 2013, 14-25
- [12] *"Discrimination of the micro electrode recordings for STN localization during DBS surgery in Parkinson's patients"*, K. Ciecierski, Z.W. Ras, A. Przybyszewski, in *Proceedings of FQAS 2013 in Granada, Spain*, LNAI, Vol. 8132, Springer, 2013, 328-339
- [11] *"Pair-based Object-driven Action Rules"*, A. Hajja, A. Wieczorkowska, Z.W. Ras, R. Gubrynowicz, in *"New Frontiers in Mining Complex Patterns"*, NFMCP 2012, ECML/PKDD Workshop, Bristol, United Kingdom, September, 2012, LNAI 7765, Springer, 2013, 79-93
- [10] *"Foundations of recommender system for STN localization during DBS surgery in Parkinson's patients"*, K. Ciecierski, Z.W. Ras, A. Przybyszewski, in *Foundations of Intelligent Systems, Proceedings of ISMIS 2012 Symposium*, LNAI, Vol. 7661, Springer, 2012, 234-243
- [9] *"From Music to Emotions and Tinnitus Treatment, Initial Study"*, D. Kohli, Z.W. Ras, P.L. Thompson, P.J. Jastreboff, A. Wieczorkowska, in *Foundations of Intelligent Systems, Proceedings of ISMIS 2012 Symposium*, LNAI, Vol. 7661, Springer, 2012, 244-253
- [8] *"Object-driven Action Rules and their Application to Hypernasality Treatment"*, A. Hajja, A. Wieczorkowska, Z.W. Ras, R. Gubrynowicz, in *Proceedings of ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, Bristol, UK, September 24-28, 2012, 104-115
- [7] *"Report of the ISMIS 2011 Contest: Music Information Retrieval"*, B. Kostek, A. Kupryjanow, P. Zwan, W. Jiang, Z.W. Ras, M. Wojnarski, J. Swietlicka, in *Foundations of Intelligent Systems, ISMIS 2011 Symposium*, LNAI, Vol. 6804, Springer, 2011, 715-724



- [6] *"Action reducts"*, S. Im, Z.W. Ras, L.-S. Tsay, in Foundations of Intelligent Systems, Proceedings of ISMIS 2011 Symposium, LNAI, Vol. 6804, Springer, 2011, 62-69
- [5] *"Selection of the optimal electrode in Parkinson's disease DBS treatment"*, K. Ciecierski, Z.W. Ras, A. Przybyszewski, in Foundations of Intelligent Systems, Proceedings of ISMIS 2011 Symposium, LNAI, Vol. 6804, Springer, 2011, 554-564
- [4] *"Recognition of instrument timbres in real polytimbral audio recordings"*, E. Kubera, A. Wieczorkowska, Z.W. Ras, M. Skrzypiec, in Proceedings of 2010 ECML/PKDD Conference, LNCS, Springer, 2010, 97-110
- [3] *"From Tinnitus Data to Action Rules and Tinnitus Treatment"*, X. Zhang, Z.W. Ras, P.J. Jastreboff, P.L. Thompson, in Proceedings of 2010 IEEE Conference on Granular Computing, Silicon Valley, CA, IEEE Computer Society, 2010, 620-625
- [2] *"Association Action Rules and Action Paths Triggered by Meta-Actions"*, A. Tzacheva, Z.W. Ras, in Proceedings of 2010 IEEE Conference on Granular Computing, Silicon Valley, CA, IEEE Computer Society, 2010, 772-776
- [1] *"Blind Music Timbre Source Isolation by Multi-resolution Comparison of Spectrum Signatures"*, X. Zhang, W. Jiang, Z.W. Ras, R. Lewis, in Proceedings of the Seventh International Conference on Rough Sets and Current Trends in Computing (RSCTC 2010), LNAI, Vol. 6086, Springer, 2010, 610-619

## Papers 2009

- [1] *"On Reaching Consensus by a Group of Collaborating Agents"*, Z. Ras, A. Dardzinska, in Proceedings of the Eighth International Conference on Flexible Query Answering Systems (FQAS'09), (Eds. T. Andreasen et al), LNAI, Vol. 5822, Springer, 2009, 583-592
- [2] *"Detecting Emotion in Classical Music from MIDI Files"*, J. Grekow, Z. Ras, in Foundations of Intelligent Systems, Proceedings of ISMIS'09, LNAI, Vol. 5722, Springer, 2009, 261-270
- [3] *"Action Rules Discovery based on Tree Classifiers and Meta-Actions"*, Z. Ras, A. Dardzinska, in Foundations of Intelligent Systems, Proceedings of ISMIS'09, (Eds. J. Rauch et al), LNAI, Vol. 5722, Springer, 2009, 66-75
- [4] *"Action Rules in Consensus Reaching Process Support"*, J. Kacprzyk, Z.W. Ras, S. Zadrozny, Proceedings of 9th International Conference on Intelligent Systems Design and Applications (ISDA'09), in Pisa, Italy, IEEE Computer Society, 2009, 827-832
- [5] *"Cooperative multi-hierarchical query answering systems"*, Z.W. Ras, A. Dardzinska, in Encyclopedia of Complexity and Systems Science, R.A. Meyers, Springer, 2009, Entry 789
- [6] *"Polyphonic Music Information Retrieval based on Multi-label Cascade Classification System"*, W. Jiang, A. Cohen, Z.W. Ras, in Advances in Information and Intelligent Systems, Ras, Z.W., Ribarsky, W (Eds), in Studies in Computational Intelligence, Vol. 251, Springer, 2009, 117-137
- [7] *"Tree-based Algorithms for Action Rules Discovery"*, Z.W. Ras, L.-S. Tsay, A. Dardzinska, in "Mining Complex Data", D. Zighed et al. (Eds.), Studies in Computational Intelligence, Vol. 165, Springer, 2009, 153-163

[8] *"Music Instrument Estimation in Polyphonic Sound Based on Short-Term Spectrum Match"*, W. Jiang, A. Wiczorkowska, Z.W. Ras, in "Foundations of Computational Intelligence Volume 2", A.-E. Hassanien et al (Eds.), Studies in Computational Intelligence, Vol. 202, Springer, 2009, 259-273

[9] *"Mining Chordal Semantics in a Non-Tagged Music Industry Database"*, R. Lewis, A. Cohen, W. Jiang, Z.W. Ras, "Recent Advances in Intelligent Information Systems", Proceedings of IIS'09, Academic Publishing House EXIT, Warsaw, Poland, 2009, 473-483

[10] *"SEWEBAR Tinnitus, Project Presentation"*, Rauch, J., Ras, Z., Chudan, D., Jiang, W., Kliegr, T., Nemrava, J., Ralbovsky, M., Svatek, V., Simunek, M., Thompson, P., Zhang, X., in Proceedings of the Conference Znalosti 2009, Brno, Czech Republic

[11] *"Mining Tinnitus Database for Knowledge"*, P. Thompson, X. Zhang, W. Jiang, Z.W. Ras, P. Jastreboff, in Data Mining and Medical Knowledge Management: Cases and Applications, (Eds: P. Berka, J. Rauch, D. Zighed), IGI Global, 2009, 293-306

## **Papers 2008**

[1] *"Harmonic Blind Sound Source Isolation Enhanced by Spectrum Clustering"*, X. Zhang, W. Jiang, Z.W. Ras, IEEE/ICDM Workshop on Mining Complex Data (MCD 2008), Pisa, Italy, ICDM Workshops Proceedings, IEEE Computer Society, 2008, 310-319

[2] *"Reclassification Rules"*, L.-S. Tsay, Z.W. Ras, S. Im, IEEE/ICDM Workshop on Foundations of Data Mining (FDM 2008), Pisa, Italy, ICDM Workshops Proceedings, IEEE Computer Society, 2008, 619-627

[3] *"Association Action Rules"*, Z.W. Ras, A. Dardzinska, L.-S. Tsay, H. Wasyluk, IEEE/ICDM Workshop on Mining Complex Data (MCD 2008), Pisa, Italy, ICDM Workshops Proceedings, IEEE Computer Society, 2008, 283-290

[4] *"Hierarchical Tree for Dissemination of Polyphonic Noise"*, R. Lewis, W. Jiang, A. Cohen, Z.W. Ras, in Proceedings of RSCTC 2008 Conference, in Akron, Ohio, LNAI 5306, Springer, 2008, 448-456

[5] *"Action Rules Discovery without pre-existing classification rules"*, Z.W. Ras, A. Dardzinska, Proceedings of RSCTC 2008 Conference, Akron, Ohio, LNAI 5306, Springer, 2008, 181-190

[6] *"Application of Action Rules to HEPAR Clinical Decision Support System"*, H. Wasyluk, Z.W. Ras, E. Wyrzykowska, in "Experimental and Clinical Hepatology", Medical Science International Publishing, Polish Association for the Study of the Liver, Vol. 4, No. 2, 2008, 46-48

[7] *"Mining scalar representations in a non-tagged music database"*, R. Lewis, W. Jiang, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'08, A. An et al. (Eds.), Toronto, Canada, LNAI, Vol. 4994, Springer, 2008, 445-454

[8] *"Multi-Granularity Classification Rule Discovery Using ERID"*, S. Im, Z. W. Ras, L.-S. Tsay, in "Proceedings of the Conference on Rough Sets and Knowledge Technology (RSKT 2008)", in Chengdu, P.R. China, LNAI, Vol. 5009, Springer, 2008, 491-499

[9] *"Action rule extraction from a decision table: ARED"*, S. Im, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'08, A. An et al. (Eds.), Toronto, Canada, LNAI, Vol. 4994, Springer, 2008, 160-168

- [10] *"Discovering the concise set of actionable patterns"*, L.-S. Tsay, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'08, A. An et al. (Eds.), Toronto, Canada, LNAI, Vol. 4994, Springer, 2008, 169-178
- [11] *"Training of Classifiers for the Recognition of a Musical Instrument Dominating in the Same-Pitch Mix"*, A. Wieczorkowska, E. Kolczynska, Z.W. Ras, in "New Challenges in Applied Intelligence Technologies", Studies in Computational Intelligence, Springer, Vol. 134, 2008, 213-222
- [12] *"Discriminant Feature Analysis for Music Timbre Recognition and Automatic Indexing"*, X. Zhang, Z.W. Ras, A. Dardzinska, in "Mining Complex Data", Post-Proceedings of 2007 ECML/PKDD International Workshop (MCD 2007), LNAI, Vol. 4944, Springer, 2008, 104-115
- [13] *"ARAS: Action Rules discovery based on Agglomerative Strategy"*, Z.W. Ras, E. Wyrzykowska, H. Wasyluk, in "Mining Complex Data", Post-Proceedings of 2007 ECML/PKDD Third International Workshop (MCD 2007), LNAI, Vol. 4944, Springer, 2008, 196-208
- [14] *"Intelligent Query Answering"*, Z.W. Ras, A. Dardzinska, in Encyclopedia of Data Warehousing and Mining - 2nd Edition, John Wang (Ed.), Idea Group, Inc, 2008, Vol. II, 1073-1078
- [15] *"Action rules mining"*, Z.W. Ras, E. Wyrzykowska, L.-S. Tsay, in Encyclopedia of Data Warehousing and Mining - 2nd Edition, John Wang (Ed.), Idea Group, Inc, 2008, Vol. I, 1-5
- [16] *"Facial recognition"*, R. Lewis, Z.W. Ras, in Encyclopedia of Data Warehousing and Mining - 2nd Edition, John Wang (Ed.), Idea Group, Inc, 2008, Vol. II, 857-862
- [17] *"Data Confidentiality and Chase-Based Knowledge Discovery"*, S. Im, Z.W. Ras, in Encyclopedia of Data Warehousing and Mining - 2nd Edition, John Wang (Ed.), Idea Group, Inc, 2008, Vol. I, 361-366
- [18] *"Automatic Music Timbre Indexing"*, X. Zhang, Z.W. Ras, in Encyclopedia of Data Warehousing and Mining - 2nd Edition, John Wang (Ed.), Idea Group, Inc, 2008
- [19] *"Mining e-Action Rules, System DEAR"*, Z.W. Ras, L.-S. Tsay, in "Data Mining: Foundations and Practice", Studies in Computational Intelligence, T.Y. Lin et al. (Eds.), Vol. 118, Springer, 2008, 289-298
- [20] *"E-Action Rules"*, L.-S. Tsay, Z.W. Ras, in "Data Mining: Foundations and Practice", Studies in Computational Intelligence, T.Y. Lin et al. (Eds.), Vol. 118, Springer, 2008, 277-288

## **Papers 2007**

- [1] *"Cooperative answering of queries based on hierarchical decision attributes"*, Z.W. Ras, A. Dardzinska, X. Zhang, in CAMES Journal, Polish Academy of Sciences, Institute of Fundamental Technological Research, Vol. 14, No. 4, 2007, 729-736
- [2] *"Discriminant feature analysis for music timbre recognition"*, Zhang, X., Ras, Z., in Proceedings of 2007 ECML/PKDD Third International Workshop on Mining Complex Data (MCD 2007), Univ. of Warsaw, Poland, 2007, 59-70
- [3] *"ARoGS: Action rules discovery based on grabbing strategy and LERS"*, Ras, Z., Wyrzykowska, E., in Proceedings of 2007 ECML/PKDD Third International Workshop on Mining Complex Data (MCD 2007), Univ. of Warsaw, Poland, 2007, 95-105

- [4] *"From Mining Tinnitus Database to Tinnitus Decision-Support System, Initial Study"*, P. Thompson, X. Zhang, W. Jiang, Z.W. Ras, in the Proceedings of IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2007), IEEE Computer Society, San Jose, Calif., 2007, 203-206
- [5] *"MIRAI: Multi-hierarchical Music Automatic Indexing and Retrieval System"*, (Invited Paper), Z.W. Ras, X. Zhang, in Proceedings of the Conference on Technologies for Data Processing (KKNTPD'07), September 24-26, 2007, Poznan Univ. of Technology, Poland, 11-22
- [6] *"Data Security and Chase"*, Z.W. Ras, S. Im, in Encyclopedia of Information Ethics and Security, Marian Quigley (Ed.), IGI Global, June, 2007, 114-120
- [7] *"Multi-way Hierarchic Classification of Musical Instrument Sounds"*, A. Wieczorkowska, Z.W. Ras, X. Zhang, Lewis, R., in "Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", IEEE Computer Society, April 26-28, 2007, in Seoul, South Korea, 897-902
- [8] *"Maximum Likelihood Study for Sound Pattern Separation and Recognition"*, X. Zhang, K. Marasek, Z.W. Ras, in "Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", IEEE Computer Society, April 26-28, 2007, in Seoul, South Korea, 807-812
- [9] *"Analysis of Sound Features for Music Timbre Recognition"*, (Invited Paper), X. Zhang, Z.W. Ras, in "Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", IEEE Computer Society, April 26-28, 2007, Seoul, South Korea, 3-8
- [10] *"Rules for Processing and Manipulating Scalar Music Theory"*, Lewis, R., Z.W. Ras, in "Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", IEEE Computer Society, April 26-28, 2007, in Seoul, South Korea, 819-824
- [11] *"Protection of Sensitive Data based on Reducts in a Distributed Knowledge Discovery System"*, S. Im, Z.W. Ras, in "Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)", IEEE Computer Society, April 26-28, 2007, in Seoul, South Korea, 762-766
- [12] *"MIRAI: Multi-hierarchical, FS-tree based Music Information Retrieval System"*, (Invited Paper), Z.W. Ras, X. Zhang, Lewis, R., in "Proceedings of RSEISP 2007", M. Kryszkiewicz et al. (Eds), LNAI, Vol. 4585, Springer, 80-89
- [13] *"Data Confidentiality versus Chase"*, Z.W. Ras, O. Gurdal, S. Im, A. Tzacheva, in "Proceedings of the Joint Rough Sets Symposium (JRS07)", May 14-16, 2007, in Toronto, Canada, LNAI, Vol. 4482, Springer, 330-337
- [14] *"Constraint Based Action Rule Discovery with Single Classification Rules"*, A. Tzacheva, Z.W. Ras, in "Proceedings of the Joint Rough Sets Symposium (JRS07)", May 14-16, 2007, in Toronto, Canada, LNAI, Vol. 4482, Springer, 322-329
- [15] *"Extended Action Rule Discovery Based on Single Classification Rules and Reducts"*, Z.W. Ras, E. Wyrzykowska, in "Rough Computing: Theories, Technologies and Applications", A.E. Hassanien, Z. Suraj, D. Slezak, P. Lingras (Eds.), IGI Global, 2007, 175-184
- [16] *"Knowledge Discovery Based Identification of Musical Pitches and Instruments in Polyphonic Sounds"*, Lewis, R., Zhang, X., Ras, Z.W., in the Special Issue on Soft Computing Applications, Journal of Engineering Applications of Artificial Intelligence, Elsevier, Vol. 20, No. 5, 2007, 637-645 (Impact Factor: 4.2)

[17] "*Sound Isolation by Harmonic Peak Partition for Music Instrument Recognition*", X. Zhang, Z.W. Ras, in the Special Issue on Knowledge Discovery, *Fundamenta Informaticae Journal*, IOS Press, Vol. 78, No. 4, 2007, 613-628

## **Papers 2006**

[1] "*Action Rules Discovery System DEAR3*", L.-S. Tsay, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'06, F. Esposito et al. (Eds.), Bari, Italy, LNAI, No. 4203, Springer, 2006, 483-492

[2] "*Blind Signal Separation of Similar Pitches and Instruments in a Noisy Polyphonic Domain*", R. Lewis, X. Zhang, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'06, F. Esposito et al. (Eds.), Bari, Italy, LNAI, No. 4203, Springer, 2006, 228-237

[3] "*Action Rules Discovery, a new simplified strategy*", Z.W. Ras, A. Dardzinska, in "Foundations of Intelligent Systems", Proceedings of ISMIS'06, F. Esposito et al. (Eds.), Bari, Italy, LNAI, No. 4203, Springer, 2006, 445-453

[4] "*Data Security versus Knowledge Loss*", Z.W. Ras, A. Dardzinska, S. Im, O. Gurdal, (Invited Paper), in the Proceedings of Artificial Intelligence Studies, Publishing House of University of Podlasie, Vol. 3, No. 26, 2006, 5-11

[5] "*Solving Failing Queries through Cooperation and Collaboration*", Z.W. Ras, A. Dardzinska, Special Issue on Web Resources Access, (Editor: M.-S. Hacid), in *World Wide Web Journal*, Springer, Vol. 9, No. 2, 2006, 173-186

[6] "*Cooperative discovery of interesting action rules*", A. Dardzinska, Z.W. Ras, in the Proceedings of FQAS 2006 Conference, Milano, Italy, (Eds. H.L. Larsen et al.), Springer, LNAI 4027, 2006, 489-497

[7] "*Discovering E-Action Rules from Incomplete Information Systems*", L.-S. Tsay, Z.W. Ras, in Proceedings of IEEE International Conference on Granular Computing (IEEE GrC 2006), May 10-12, 2006, Atlanta, Georgia, 518-521

[8] "*Differentiated Harmonic Feature Analysis on Music Information Retrieval for Instrument Recognition*", X. Zhang, Z.W. Ras, in Proceedings of IEEE International Conference on Granular Computing (IEEE GrC 2006), May 10-12, 2006, Atlanta, Georgia, 578-581

[9] "*Extracting Rules from Incomplete Decision Systems: System ERID*", A. Dardzinska, Z.W. Ras, in *Foundations and Novel Approaches in Data Mining*, (Eds. T.Y. Lin, S. Ohsuga, C.J. Liao, X. Hu), Studies in Computational Intelligence, Vol. 9, Springer, 2006, 143-154

[10] "*Multi-label classification of emotions in music*", A. Wiczorkowska, P. Synak, Z.W. Ras, in "Intelligent Information Processing and Web Mining", *Advances in Soft Computing*, Proceedings of IIS 2006 Symposium, Ustron, Poland, Springer, Vol. 35, 2006, 307-315

## **Papers 2005**

[1] "*Building a security-aware query answering system based on hierarchical data masking*", S. Im, Z.W. Ras, A. Dardzinska, in "Computational Intelligence in Data Mining", Proceedings of 2005 IEEE ICDM Workshop in Houston, Texas, Published by Math. Dept., Saint Mary's Univ., Nova Scotia, Canada, 2005, 55-62

- [2] *"Mining E-Action Rules"*, L.-S. Tsay, Z.W. Ras, A. Dardzinska, in "Mining Complex Data", Proceedings of 2005 IEEE ICDM Workshop in Houston, Texas, Published by Math. Dept., Saint Mary's Univ., Nova Scotia, Canada, 2005, 85-90
- [3] *"SCIKD: Safeguarding Classified Information from Knowledge Discovery"*, S. Im, Z.W. Ras, A. Dardzinska, in "Foundations of Semantic Oriented Data and Web Mining", Proceedings of 2005 IEEE ICDM Workshop in Houston, Texas, Published by Math. Dept., Saint Mary's Univ., Nova Scotia, Canada, 2005, 34-39
- [4] *"KD-Chase based query answering for hierarchical information systems"*, Z. Ras, A. Dardzinska, Proceedings of the CS&P 2005 Workshop in Ruciane-Nida, Poland, (Ed. L. Czaja), Warsaw University, Vol. 2, 2005, 445-454
- [5] *"Ensuring Data Security against Knowledge Discovery in Distributed Information Systems"*, S. Im, Z.W. Ras, in the Proceedings of the Tenth International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC'05), LNAI 3642, Springer, 2005, 548-557
- [6] *"Knowledge Discovery Based Query Answering in Hierarchical Information Systems"*, Z.W. Ras, A. Dardzinska, O. Gurdal, Tenth International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (FDGrC'05), LNAI 3642, Springer, 2005, 221-230
- [7] *"Mining for Interesting Action Rules"*, Z.W. Ras, A. Tzacheva, L.-S. Tsay, O. Gurdal, Proceedings of IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2005), Compiègne University of Technology, France, 2005, 187-193
- [8] *"Collaboration and Distributed Chase"*, A. Dardzinska, Z.W. Ras, Issues in Soft Computing Theory and Applications, Akademicka Oficyna Wydawnicza Exit, 2005, 119-130
- [9] *"CHASE-2: Rule based chase algorithm for information systems of type lambda"*, A. Dardzinska, Z.W. Ras, Second International Workshop on Active Mining (AM'2003), Maebashi City, Japan, (Eds. S. Tsumoto et al.), LNAI, No. 3430, Springer, 2005, 258-270
- [10] *"Solving failing queries through cooperation and collaboration"*, Z.W. Ras, A. Dardzinska, in "Foundations of Intelligent Systems", Proceedings of ISMIS'05, M.-S. Hacid et al. (Eds.), Saratoga Springs, New York, LNAI, No. 3488, Springer, 2005, 152-160
- [11] *"Extracting emotions from music data"*, A. Wieczorkowska, P. Synak, R. Lewis, Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'05, M.-S. Hacid et al. (Eds.), Saratoga Springs, New York, LNAI, No. 3488, Springer, 2005, 456-465
- [12] *"New methodology of facial recognition, Part I"*, R.A. Lewis, Z.W. Ras, in Intelligent Information Processing and Web Mining, Advances in Soft Computing, Proceedings of the IIS'2005 Symposium, Gdansk, Poland, Springer, 2005, 615-624
- [13] *"New methodology of facial recognition, Part II"*, R.A. Lewis, Z.W. Ras, in Intelligent Information Processing and Web Mining, Advances in Soft Computing, Proceedings of the IIS'2005 Symposium, Gdansk, Poland, Springer, 2005, 625-632
- [14] *"Data security against knowledge discovery in distributed information systems", (Invited Paper)*, Z. W. Ras, S. Im, in Technologies for Data Processing, Proceedings of the First National Conference, T. Morzy, H. Rybinski (Eds.), Poznan, Poland, Poznan Technical University Publisher, 2005, 11-12

- [15] *"Creating reliable database for experiments on extracting emotions"*, A. Wiczorkowska, P. Synak, R.A. Lewis, Z.W. Ras, in *Intelligent Information Processing and Web Mining, Advances in Soft Computing, IIS'2005 Symposium Proceedings*, Springer, 2005, 395-404
- [16] *"Intelligent query answering"*, Z.W. Ras, A. Dardzinska, in *Encyclopedia of Data Warehousing and Mining*, (Ed. J. Wang), Idea Group Inc., 2005, 639-643
- [17] *"Action rules discovery: System DEAR2, method and experiments"*, L.-S. Tsay, Z.W. Ras, in the *Special Issue on Knowledge Discovery, Journal of Experimental and Theoretical Artificial Intelligence*, Taylor & Francis, Vol. 17, No. 1-2, 2005, 119-128
- [18] *"Action rules"*, Z.W. Ras, A. Tzacheva and L.-S. Tsay, in *Encyclopedia of Data Warehousing and Mining*, (Ed. J. Wang), Idea Group Inc., 2005, 1-5
- [19] *"Action rules mining"*, A. Tzacheva, Z.W. Ras, in the *Special Issue on Knowledge Discovery, International Journal of Intelligent Systems*, Wiley, Vol. 20, No. 7, 2005, 719-736 (Impact Factor: 10.3)
- [20] *"Data security and null value imputation in distributed information systems"*, Z.W. Ras, A. Dardzinska, in *"Monitoring, Security and Rescue Techniques in Multiagent Systems"*, *Advances in Soft Computing*, Springer, 2005, 133-146
- [21] *"In search for action rules of the lowest cost"*, Z.W. Ras, A. Tzacheva, in *"Monitoring, Security and Rescue Techniques in Multiagent Systems"*, *Advances in Soft Computing*, Springer, 2005, 261-272
- [22] *"Do we need automatic indexing of musical instruments?"*, A. Wiczorkowska, Z.W. Ras, *Proceedings of the International Workshop on Intelligent Media Technology for Communicative Intelligence*, Warsaw, Poland, LNCS, Vol. 3490, Springer, 2005, 239-248

## **Papers 2004**

- [1] *"Actionability as objective measure of rules interestingness"*, with L.-S. Tsay, A. Wiczorkowska, *Proceedings of ICDM'04 Workshop on Foundations of Data Mining*, (Eds. T.Y. Lin, S. Smale, T. Poggio, C.J. Liao), Brighton, UK, IEEE Computer Society, 2004, 137-142
- [2] *"Query answering based on collaboration and chase"*, with A. Dardzinska, *Proceedings of FQAS'04 Conference*, Lyon, France, LNCS/LNAI, No. 3055, Springer, 2004, 125-136
- [3] *"Data security and null value imputation in distributed information systems"*, (*Invited Paper*), with A. Dardzinska, *Proceedings of the International Workshop on Monitoring, Security and Rescue Techniques in Multiagent Systems*, University of Warsaw, 2004, 83-96
- [4] *"System ADReD for Discovering Rules based on Hyperplanes"*, with A. Dardzinska and X. Liu, in the *Special Issue on Selected Problems in Knowledge Representation, International Journal of Engineering Applications of Artificial Intelligence*, Vol. 17, No. 4, Elsevier, 2004, 401-406
- [5] *"Tree-based algorithm for discovering extended action-rules (System DEAR2)"*, with L.-S. Tsay and A. Wiczorkowska, in *"Intelligent Information Processing and Web Mining"*, *Advances in Soft Computing, Proceedings of the IIS'2004 Symposium*, Zakopane, Poland, Springer, 2004, 459-464
- [6] *"Rule discovery by axes-driven hyperplanes construction"*, with A. Dardzinska and X. Liu, in *"Intelligent Information Processing and Web Mining"*, *Advances in Soft Computing, Proceedings of the IIS'2004 Symposium*, Zakopane, Poland, Springer, 2004, 535-546

[7] "*Ontology Based Distributed Autonomous Knowledge Systems*", with A. Dardzinska, in the Special Issue on Web-Universal Integration, Information Systems International Journal, Elsevier, Vol. 29, No. 1, 2004, 47-58

### **Papers 2003**

[1] "*How to increase support of rules to be discovered from DB*", with A. Dardzinska, Proceedings of the Symposium on Methods of AI (AI-METH2003), Silesian University of Technology, Gliwice, Poland, November 2003, 123-128

[2] "*Rule-based Chase algorithm for partially incomplete information systems*", with A. Dardzinska, Proceedings of the Second International Workshop on Active Mining (AM'2003), Maebashi City, Japan, 2003, 42-51

[3] "*Knowledge-Discovery Based Flexible Query Answering Systems*", ICS PAS Reports, No. 963, Warsaw, Poland, 2003

[4] "*Chasing Unknown Values in Incomplete Information Systems*", with A. Dardzinska, in Proceedings of ICDM'03 Workshop on Foundations and New Directions of Data Mining, (Eds: T.Y. Lin, X. Hu, S. Ohsuga, C. Liao), Melbourne, Florida, IEEE Computer Society, 2003, 24-30

[5] "*On Rule Discovery from Incomplete Information Systems*", with A. Dardzinska, in the Proceedings of ICDM'03 Workshop on Foundations and New Directions of Data Mining, (Eds: T.Y. Lin, X. Hu, S. Ohsuga, C. Liao), Melbourne, Florida, IEEE Computer Society, 2003, 31-35

[6] "*Representing audio data by FS-trees and Adaptable TV-trees*", with A. Wiczorkowska and L.-S. Tsay, in Foundations of Intelligent Systems, Proceedings of ISMIS'03 Symposium, Maebashi City, Japan, LNAI, Springer-Verlag, No. 2871, 2003, 135-142

[7] "*Editorial - Music information retrieval*", with A. Wiczorkowska, Journal of Intelligent Information Systems, Vol. 21, No. 1, Kluwer, 2003, 5-8

[8] "*Discovering extended action-rules, System DEAR*", with L.-S. Tsay, in "Intelligent Information Systems 2003", Advances in Soft Computing, Proceedings of the IIS'2003 Symposium, Zakopane, Poland, Springer, 2003, 293-300

[9] "*Discovering semantic inconsistencies to improve action rules mining*", with A.A. Tzacheva, in "Intelligent Information Systems 2003", Advances in Soft Computing, Proceedings of the IIS'2003 Symposium, Zakopane, Poland, Springer, 2003, 301-310

[10] "*Discovering non-standard semantics of semi-stable attributes*", with A.A. Tzacheva, in "Proceedings of FLAIRS-2003", St. Augustine, Florida, (Eds. I. Russell, S. Haller), AAAI Press, 2003, 330-334

[11] "*The Wisdom Web: New Challenges for Web Intelligence*", with J. Liu, N. Zhong, Y. Yao, Journal of Intelligent Information Systems, Vol. 20, No. 1, Kluwer, 2003, 5-9

### **Papers 2002**

[1] "*Handling semantic inconsistencies in query answering based on distributed knowledge mining*", with A. Dardzinska, in Special Issue on Intelligent IT (Eds. N. Zhong, J. Liu, P. Wang), International Journal of Pattern Recognition and Artificial Intelligence, World Scientific, Vol. 16, No. 8, 2002, 1087-1099



[2] "*Collaborative query processing in DKS controlled by reducts*", with A. Dardzinska, in "Rough Sets and Current Trends in Computing", Proceedings of RSCTC'02 Symposium, (Eds. J. Alpigini, J. Peters, A. Skowron, N. Zhong), LNCS/LNAI, Vol. 2475, Springer-Verlag, 2002, 189-196

[3] "*Global action rules in distributed knowledge systems*", with S. Gupta, in CS&P 2001 Special Issue (Eds. L. Czaja, H.-D. Burkhard, P. Starke), Fundamenta Informaticae Journal, IOS Press, Vol. 51, No. 1-2, 2002, 175-184

[4] "*Action rules, re-classification of objects and e-commerce*", with S. Gupta, in "Intelligent Information Systems 2002", Advances in Soft Computing, Proceedings of the IIS'2002 Symposium, Sopot, Poland, Physica-Verlag, Springer, 2002, 101-108

[5] "*Handling semantic inconsistencies in distributed knowledge systems using ontologies*", with A. Dardzinska, in "Foundations of Intelligent Systems", Proceedings of ISMIS'02 Symposium, Lyon, France, LNAI, Vol. 2366, Springer-Verlag, 2002, 66-74

[6] "*Reducts-driven query answering for distributed autonomous knowledge systems*", Z.W. Ras, International Journal of Intelligent Systems, John Wiley & Sons, Vol. 17, No. 2, 2002, 113-124 (Impact Factor: 10.3)

#### **Papers 1999-2001**

[1] "*Query answering based on distributed knowledge mining*", Z.W. Ras, in "Intelligent Agent Technology, Research and Development", Proceedings of IAT'01, Maebashi City, Japan, World Scientific Publishers, 2001, 17-27 (Invited Paper)

[2] "*Audio content description in sound databases*", Z.W. Ras, A. Wieczorkowska, in "Web Intelligence: Research and Development", (Eds. N. Zhong, Y. Yao, J. Liu, S. Ohsuga), Proceedings of WI'01, Maebashi City, Japan, LNAI 2198, Springer, 2001, 175-183

[3] "*Action-rules: the role of attributes in flexible object classification*", Z.W. Ras, S. Gupta, in "Proceedings of the Workshop on Concurrency Specification and Programming", University of Warsaw, Poland, October 3-5, 2001, 210-217 (Invited Paper)

[4] "*Indexing audio databases with musical information*", A. Wieczorkowska, Z.W. Ras, in "Proceedings of SCI'01", Volume 10, Orlando, Florida, July 22-25, 2001, 279-285

[5] "*The role of support and confidence in collaborative query answering*", Z.W. Ras, in "Intelligent Information Systems", Advances in Soft Computing, Proceedings of the Tenth International Conference, IIS'2001, Zakopane, Poland, Physica-Verlag, Springer, 2001, 221-226

[6] "*Query answering in DAKS based on reducts*", Z.W. Ras, in "Flexible Query Answering Systems", Advances in Soft Computing, Proceedings of the Fourth International Conference, FQAS'2000, Warsaw, Poland, Physica-Verlag, Springer, 2000, 117-127

[7] "*Foundations and discovery of operational definitions*", Z.W. Ras, in "Foundations of Intelligent Systems", Proceedings of ISMIS'00, Lecture Notes in Artificial Intelligence, No. 1932, Springer-Verlag, 2000, 582-590

[8] "*Action-rules: how to increase profit of a company*", Z.W. Ras, A. Wieczorkowska, in "Principles of Data Mining and Knowledge Discovery", (Eds. D.A. Zighed, J. Komorowski, J. Zytkow), Proceedings of PKDD'00, Lyon, France, LNAI, No. 1910, Springer, 2000, 587-592

[9] "*Mining for attribute definitions in a distributed two-layered DB system*", J.M. Zytkow, Z.W. Ras, Journal of Intelligent Information Systems, Kluwer, Vol. 14, No. 2/3, 2000, 115-130

[10] "*Mining for action-rules in large decision tables classifying customers*", Z.W. Ras, A. Wieczorkowska, in "Intelligent Information Systems", Advances in Soft Computing, Proceedings of the IIS'2000 Symposium, Poland, Physica-Verlag, Springer, 2000, 55-64

[11] "*Discovering rules in information trees*", Z.W. Ras, in "Principles of Data Mining and Knowledge Discovery", (Eds. J. Zytkow, J. Rauch), Proceedings of PKDD'99, Prague, Czech Republic, LNAI, No. 1704, Springer, 1999, 518-523

[12] "*Mining distributed databases for attribute definitions*", Z.W. Ras, J.M. Zytkow, in "Data Mining and Knowledge Discovery: Theory, Tools, and Technology", Proceedings of SPIE, Orlando, April 5-6, 1999, Vol. 3695, 171-178

[13] "*Discovery of equations and the shared operational semantics in distributed autonomous databases*", Z.W. Ras, J.M. Zytkow, in "Methodologies for Knowledge Discovery and Data Mining", (Eds. N. Zhong, L. Zhou), Proceedings of PAKDD'99, Beijing, China, LNAI, No. 1574, Springer, 1999, 453-463

[14] "*Intelligent query answering in DAKS*", Z.W. Ras, in "Knowledge Management in Fuzzy Databases", (Eds. O. Pons, M.A. Vila, J. Kacprzyk), Physica-Verlag, Springer, 1999, 159-170

## **External Committees/Activities**

### **Conference/PC Chair (2005-2022)**

**General Chair:** *International Symposium on Methodologies for Intelligent Systems (ISMIS) – 2005* (Saratoga, NY)

**Program Chair:** *International Workshop on Mining Complex Data (MCD) – 2005* (New Orleans, Louisiana)

**General Chair:** *International Symposium on Methodologies for Intelligent Systems (ISMIS) – 2006* (Bari, Italy)

**Program Chair:** *International Workshop on Mining Complex Data (MCD) – 2006* (Hong Kong)

**Program Chair:** *International Workshop on Mining Complex Data (MCD) – 2007* (Warsaw, Poland)

**Program Vice-Chair:** *IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2007)*, November 2-5, 2007 (Silicon Valley)

**Program Chair:** *International Workshop on Mining Complex Data (MCD) – 2008* (Pisa, Italy)

**General Chair:** *International Symposium on Methodologies for Intelligent Systems (ISMIS) – 2008* (Toronto, Canada)

**Program Co-Chair:** *International Workshop on Interesting Knowledge Mining (IKM 09)*, August 25-27, 2009, Seoul, South Korea,

**General Chair:** *International Symposium on Methodologies for Intelligent Systems (ISMIS) – 2009* (Prague, Czech Republic)

**Program Vice-Chair:** *IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2010)*, August 31 - Sept. 3, 2010, Toronto, Canada

**General Chair:** *International Symposium on Methodologies for Intelligent Systems (ISMIS) – 2011*, in Warsaw, Poland.

**Program Co-Chair:** *2011 IEEE/WIC/ACM International Conference on Web Intelligence (WIC 2011)*, 22 – 27 August 2011, in Lyon, France

**Conference Co-Chair:** *2011 IEEE International Conference on Granular Computing (GrC 2011)*, 8-10 November, 2011, in Kaohsiung, Taiwan

**Track Co-Chair:** *Third International Conference on Intelligent Networking and Collaborative Systems (INCoS 2011)*, November 30 - December 2, 2011, in Fukuoka, Japan

**Workshop Co-Chair:** *ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, September 24-28, 2012, Bristol, UK

**General Chair:** *20th International Symposium on Methodologies for Intelligent Systems (ISMIS'12)*, December 5-7, 2012, Macau, China

**Workshop Co-Chair:** *ECML/PKDD Workshop on New Frontiers in Mining Complex Patterns (NFMCP 2013)*, September 27, 2013, Prague, Czech Republic

**General Chair:** *21st International Symposium on Methodologies for Intelligent Systems*, June 25-27, 2014, Roskilde, Denmark

**Program Co-Chair:** *2014 Joint Rough Set Symposium (JRS 2014)*, July 9-13, 2014, Madrid, Spain

**Workshop Co-Chair:** *ECML/PKDD Workshop on New Frontiers in Mining Complex Patterns (NFMCP 2014)*, September 15-19, Nancy, France

**Program Co-Chair:** *ICDM 2014 Workshop on Domain Driven Data Mining (DDDM 2014)*, December 14-17, 2014, Shenzhen, China

**Publicity Chair:** *2015 Joint Rough Set Symposium (JRS 2015)*, October 20-24, 2015, Seoul, Korea

**Symposium Co-Chair:** *22nd International Symposium on Methodologies for Intelligent Systems*, October 21-23, 2015, Lyon, France

**Workshop Co-Chair:** *ECML/PKDD Workshop on New Frontiers in Mining Complex Patterns (NFMCP 2015)*, September 7-11, 2015, Porto, Portugal

**Program Co-Chair:** *2016 IEEE/WIC/ACM International Conference on Web Intelligence (WIC 2016)*, October 2016, in Omaha, Nebraska  
<https://wibih.unomaha.edu/>

**Co-Chair:** *5th International ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, September 19-23, 2016, Riva del Garda, Italy

**Honorary Chair & Plenary Speaker:** *Conference on Women in Mathematics – Professor Helena Rasiowa*, June 22-24, Rzeszow, Poland)

**Steering Committee Chair:** *23rd International Symposium on Methodologies for Intelligent Systems*, June 26-29, 2017, Warsaw, Poland

**Co-Chair:** *The Sixth ECML/PKDD International Workshop on New Frontiers in Mining Complex Patterns*, September 18-22, 2017, Skopje, Macedonia

**Steering Committee Member & Tutorial Speaker:** *2017 IEEE/WIC/ACM International Conference on Web Intelligence (WI'17)*, August 23-27, 2017, Leipzig, Germany

**Co-Chair:** *The Seventh International NFMCP Workshop (in conjunction with ECML-PKDD 2017)*, September 18-22, 2017, Skopje, Macedonia

**Steering Committee Chair:** *24th International Symposium on Methodologies for Intelligent Systems*, October 29-31, 2018, Limassol, Cyprus

**Co-Chair:** *The Eight International NFMCP Workshop (in conjunction with ECML-PKDD 2019)*, September 16, 2019, Wuzburg, Germany

**Steering Committee Chair:** *25th International Symposium on Methodologies for Intelligent Systems (ISMIS 2020)*, May 20-22, 2020, Graz, Austria

**Co-Chair:** *The Ninth International NFMCP Workshop (in conjunction with ECML-PKDD 2020)*, September 14-18, 2020, Virtual

**Steering Committee Chair:** *26th International Symposium on Methodologies for Intelligent Systems (ISMIS 2022)*, October 3-5, 2022, Cosenza, Italy

**Co-Chair:** *The Tenth International NFMCP Workshop (in conjunction with ECML-PKDD 2022)*, September 19-23, 2022, Grenoble, France

### **Program/Advisory Committee Member (2007-2022)**

*International Conference on Multimedia and Ubiquitous Engineering (MUE 2007)*, April 26-28, 2007, in Seoul, South Korea

*Joint Rough Sets Symposium JRS07*, May 14-16, 2007, in Toronto, Canada

*International Workshop on Autonomous Intelligent Systems: Agents and Data Mining (AIS-ADM 2007)*, June 3-5, 2007, in St. Petersburg, Russia

*Rough Sets and Emerging Intelligent Systems Paradigms (RSEISP'07)*, June 28-30, 2007, in Warsaw, Poland

*14th ISPE International Conference on Concurrent Engineering (CE 2007)*, July 16-20, 2007, in Sao Jose dos Campos, Brazil

*Third International Conference on Advanced Data Mining and Applications (ADMA 2007)*, August 6-8, 2007, in Harbin, China

*The 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2007)*, August 12-15, 2007, in San Jose, CA

*9th International Conference on Data Warehousing and Knowledge Discovery (DaWaK 2007)*, September 3-7, 2007, in Regensburg, Germany

*18th European Conference on Machine Learning and the 11th European Conference on Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD'07)*, September 17-21, in Warsaw, Poland

*International Conference on Artificial Intelligence (AI 2007)*, September 20-21, 2007, in Siedlce, Poland

*Conference on Technologies for Data Processing (KKNTPD'07)*, September 24-26, 2007, in Poznań, Poland

*Second International Symposium on Advances in AI and Applications (AAIA'07)*, October 15-17, 2007, in Wisła, Poland

*International Conference on Principles of Information Technology and Applications (PITA'07)*, October 15-17, 2007, in Wisła, Poland

*Seventh IEEE International Conference on Data Mining (ICDM'07)*, Oct 28-31, 2007, in Omaha, NE

*First International Symposium on Data, Privacy, and E-Commerce (ISDPE'07)*, November 1-3, 2007, in Chengdu, China

*2007 IEEE International Conference on Granular Computing (GrC 2007)*, November 2-4, 2007, in Silicon Valley

*IEEE International Agent and Data Mining Interaction Workshop, in conjunction with the 2007 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT 2007)*, November 2-4, 2007, in Silicon Valley

*2007 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2007)*, November 2-5, 2007, in Silicon Valley

*Symposium on Methods of Artificial Intelligence (AI-METH 2007)*, November 7-9, 2007, in Gliwice, Poland

*2nd KES International Symposium on Agent and Multiagent Systems: Technologies and Applications - KES-AMSTA 2008*, March 26-28, 2008, in Inha University, South Korea

*3rd International Conference on Rough Sets and Knowledge Technology (RSKT'08)*, May 17-19, 2008, in Chengdu, China

*Seventeenth International Symposium on Methodologies for Intelligent Systems (ISMIS'08)*, May 20-23, 2008, in Toronto, Canada

*International Conference on Intelligent Information Systems (IIS 2008)*, June 16 – 18, 2008, Zakopane, Poland

*The Fourth International Conference on Advanced Data Mining and Applications (ADMA 2008)*, July 29-31, 2008, Chengdu, China

*IEEE International Conference on Granular Computing (GrC 2008)*, Aug 26-28, 2008, in Hangzhou, China

*Tenth International Conference on Data Warehousing and Knowledge Discovery (DaWaK 2008)*, September 1-5, 2008, Turin, Italy

*Third International Symposium Advances in Artificial Intelligence and Applications (AAIA'08)*, October 20-22, 2008, Wisła, Poland

*International Conference on Rough Sets and Current Trends in Computing (RSCTC 2008)*, October 23 – 25, 2008, University of Akron, Ohio

*ACM 17th Conference on Information and Knowledge Management (CIKM'08)*, October 26 – 30, 2008, Napa Valley, California

*IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT-08)*, December 9-12, 2008, Sydney, Australia

*2009 Workshop on Agents & Data Mining Interaction (ADMI-09)*, May 11-12, 2009, Budapest, Hungary

*3rd International KES Symposium on Agents and Multi-agent Systems – Technologies and Applications*, June 3-5, 2009, Uppsala, Sweden

*International Conference on Intelligent Information Systems (IIS 2009)*, June 23 – 25, 2009, Krakow, Poland

*Mining Interesting Knowledge*, IEA AIE Special Session, June 24-27, 2009, Tainan City, Taiwan

*The Fourth International Conference on Rough Set and Knowledge Technology*, July 14-16, 2009, Gold Coast, Australia

*5th International Conference on Advanced Data Mining and Applications (ADMA2009)*, August 17-19, 2009, Beijing, China

*2009 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT'09)*, September 15-18, 2009, Milano, Italy

*First International Workshop on Distributed XML Processing: Theory and Practice*, September 22-25, 2009, Vienna, Austria

*International Conference on Man-Machine Interaction (ICMMI-2009)*, September 25-27, 2009, The Beskids - Kocierz Pass, Poland

*International Conference on Knowledge Discovery and Information Retrieval (KDIR'09)*, 5 - 8 October, 2009, Madeira, Portugal

*4th International Symposium on Advances in Artificial Intelligence and Applications (AAIA'09)*, October 12-14, 2009, Mragowo, Poland

*Eighth International Conference on Flexible Query Answering Systems (FQAS-2009)*, October 26-28, 2009, Roskilde University, Denmark /Advisory Committee/

*ACM 18th Conference on Information and Knowledge Management (CIKM 2009 )*, November 2-6, 2009, HongKong, China

*8th Mexican International Conference on Artificial Intelligence, (MICA I 2009)*, November 9-13, 2009, Guanajuato, Mexico

*Symposium on Methods of Artificial Intelligence (AI METH 2009)*, November 18-20, 2009, Gliwice, Poland

*The 4th International Conference on Intelligent Systems & Knowledge Engineering (ISKE 2009)*, November 27-28, 2009, Hasselt, Belgium

*IEEE International Conference on Data Mining (ICDM 2009)*, December 6-9, 2009, Miami, Florida

*The 12th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC'2009)*, December 16-18, 2009, Indian Institute of Technology, Delhi, India

*Sixth Workshop on Agents and Data Mining Interaction (ADMI-10)*, May 10-11, 2010, Toronto, Canada

*International Joint Conference on Intelligent Information Systems*, June 8-10, 2010, Siedlce, Poland

*PAKDD Workshop on Behavior Informatics (BI 2010)*, June 21-24, 2010, Hyderabad, India

*4th International KES Symposium on Agents and Multi-agent Systems - Technologies and Applications (KES-AMSTA 2010)*, June 23-25, 2010, Gdynia, Poland

*The Seventh International Conference on Rough Sets and Current Trends in Computing (RSCTC 2010)*, June 28-30, 2010, Warsaw, Poland

*7th Sound and Music Computing Conference (SMC 2010)*, July 21-24, 2010, Barcelona, Spain

*IEEE Symposium on Foundations and Practice of Data Mining (FDM 2010)*, August 15, 2010, Silicon Valley, California

*Second International Workshop on Interesting Knowledge Mining (IKM 2010)*, August 16-18, 2010, Seoul, South Korea

*The 2010 International Conference on Brain Informatics (BI 2010)*, August 28 - 30, 2010, Toronto, Canada

*IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT'10)*, August 31 - Sept. 3, 2010, Toronto, Canada

*The 14th International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA 2010)*, September 8-10, 2010, Varna, Bulgaria

*Second International Symposium on Data, Privacy, & E-Commerce (ISDPE 2010)*, September 12-14, 2010, Buffalo/Niagara Fall

*5th International Symposium Advances in Artificial Intelligence and Applications (AAIA'10)*, October 18-20, 2010, Wisla, Poland

*Second International Conference on Knowledge Discovery and Information Retrieval (KDIR 2010)*, October 25-28, 2010, Valencia, Spain

*2010 IEEE International Conference on Intelligent Computing and Intelligent Systems (ICIS2010)*, October 29-31, 2010, Xiamen, P. R. China

*Ninth Mexican International Conference on Artificial Intelligence (MICA I 2010)*, November 8-13, 2010, Pachuca, Mexico

*2010 International Conference on Intelligent Systems and Knowledge Engineering (ISKE2010)*, November 15-16, 2010, Hangzhou, China

*15th Annual Conference on Technologies and Applications of Artificial Intelligence (TAAI 2010)*, November 18-20, 2010, Hsinchu, Taiwan

*Tenth International Conference on Intelligent Systems Design and Applications (ISDA2010)*, November 29- December 1, 2010, Cairo, Egypt

*10th IEEE International Conference on Data Mining (ICDM 2010)*, December 13-17, 2010, Sydney, Australia



*The Seventh International Workshop on Agents and Data Mining Interaction (ADMI 2011)*, May 2-6, 2011, in Taipei, Taiwan

*2011 PAKDD Workshop on Behavior Informatics (BI2011)*, May 24, 2011, in Shenzhen, China

*2011 PAKDD Workshop on Quality issues, measures of interestingness and evaluation of data mining models (QIMIE'11)*, May 24, 2011, in Shenzhen, China

*International Joint Conference on Security and Intelligent Information Systems*, June 13-14, 2011, in Warsaw, Poland

*The Fifth International Conference on Complex, Intelligent, and Software Intensive Systems (CISIS-2011)*, 30 June - 2 July, 2011, in Seoul, Korea

*5th International KES Symposium on Agents and Multi-agent Systems – Technologies and Applications*, 29 June - 1 July, 2011, in Manchester, UK

*13th International Conference on Data Warehousing and Knowledge Discovery - DaWaK 2011*, August 29 - September 2, 2011, in Toulouse, France

*European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD)*, September 5-9, 2011, in Athens, Greece

*Mining Complex Patterns (MCP 2011) Workshop*, September 17, 2011, in Palermo, Italy

*6th International Symposium Advances in Artificial Intelligence and Applications (AAIA'11)*, September 19-21, in Szczecin, Poland

*International Conference on Man-Machine Interactions (ICMMI 2011)*, 6-9 October 2011, The Beskids, Poland

*The 6th International Conference on Rough Sets and Knowledge Technology (RSKT'11)*, 9-12 October 2011, Banff, Canada

*Ninth International Conference on Flexible Query Answering (FQAS 2011)*, October 26-28, 2011, Ghent, Belgium

*International Conference on Knowledge Discovery and Information Retrieval (KDIR 2011)*, October 26-29, 2011, Paris, France

*2011 Conference on Technologies and Applications of Artificial Intelligence (TAAI 2011)*, November 11-13, 2011, Taoyuan, Taiwan

*IEEE International Conference on Data Mining (ICDM 2011)*, December 11-14, 2011, Vancouver, Canada

*First International Conference on Intelligent Systems and Applications (INTELLI 2012)*, April 29 - May 4, 2012, Chamonix / Mont Blanc, France

*SYNAT 2012*, June 4-5, 2012, Warsaw, Poland

*The Eight International Workshop on Agents and Data Mining Interactions (ADMI)*, June 4-5, 2012, Valencia, Spain

*2012 IEEE International Conference on Granular Computing*, August 11-13, 2012, Hangzhou, China [Advisory Board]

*2012 Joint Rough Set Symposium (JRS2012)*, August 17-20, 2012, Chengdu, China

*13th International Conference on Data Warehousing and Knowledge Discovery - DaWaK 2011*, September 2-7, 2012, in Vienna, Austria

*Mining Complex and Stream Data*, ADBIS Workshop, September 17, 2012, Poznan, Poland

*7th International Symposium Advances in Artificial Intelligence and Applications*, September 19-20, 2012, Wroclaw, Poland

*First International Conference on Data Analytics*, September 23-28, 2012, Barcelona, Spain

*International Conference on Knowledge Discovery and Information Retrieval*, October 4-7, 2012, Barcelona, Spain

*The 2012 Conference on Technologies and Applications of Artificial Intelligence (TAAI 2012)*, November 16-18, 2012, Tainan, Taiwan

*4th International Conference on Computational Collective Intelligence (ICCCI 2012)*, Nov. 28-30, 2012, Ho Chi Minh city, Vietnam

*International Conference on Advanced Machine Learning Technologies and Applications (AMLT12)*, December 8-10, 2012, Cairo, Egypt

*The 2012 IEEE/WIC International Conference on Intelligent Agent Technology*, December 5-7, 2012, Macau, China

*The 2012 IEEE/WIC/ACM International Conference on Web Intelligence*, December 5-7, 2012, Macau, China

*IEEE International Conference on Data Mining (ICDM'12)*, December 10-13, 2012, Brussels, Belgium

*The third Quality issues, measures of interestingness and evaluation of data mining models workshop (QIMIE'13)*, April 14-17, 2013, Gold Coast, Australia

*The Second International Conference on Intelligent Systems and Applications (INTELLI 2013)*, April 21-26, 2013, Venice, Italy

*The Ninth International Workshop on Agents and Data Mining Interaction (ADMI13)*, May 6-10, 2013, Saint Paul, Minnesota, USA

*Language Processing and Intelligent Information Systems*, June 17-18, 2013, Warsaw, Poland

*SYNAT*, July 1-3, 2013, Warsaw, Poland

*8th International Symposium Advances in Artificial Intelligence and Applications (AIA'13)*, September 8-11, 2013, Krakow, Poland

*15th International Conference on Data Warehousing and Knowledge Discovery - DaWaK 2013*, August 26-29, 2013, in Prague, Czech Republic

*10th International Conference on Flexible Query Answering Systems (FQAS)*, September 18-20, 2013, Granada, Spain

*ECML/PKDD Workshop on Data Mining on Linked Data (DMoLD'13)*, September 28, 2013, Prague, Czech Republic

*Fifth International Conference on Knowledge Discovery and Information Retrieval*, September 19-22, 2013, Vilamoura, Portugal

*The Second International Conference on Data Analytics*, September 29 - October 3, 2013, Porto, Portugal

*International Workshop on Intelligent Agents for Big Data (IABD-13)*, October 6-9, 2013, Santa Clara, CA, USA

*Joint Rough Set Symposium (JRS) 2013*, October 11-14, 2013, Halifax, Canada

*ICMMI 2013 International Conference on Man-Machine Interactions*, October 22-25, 2013, The Beskids, Poland

*2013 IEEE/WIC/ACM International Conference on Web Intelligence (WI'13)*, November 17-20, 2013, Atlanta, USA

*2013 Conference on Technologies and Applications of Artificial Intelligence (TAAI 2013)*, December 6-8, 2013, Taipei, Taiwan

*IEEE International Conference on Data Mining (ICDM'13)*, December 8-11, 2013, Dallas, Texas, USA

*IEEE International Conference on Granular Computing (IEEE Grc2013)*, December 13-15, 2013, Beijing, China

*7th International Conference on Health Informatics*, March 3-6, 2014, Angers, Loire Valley, France

*The Tenth International Workshop on Agents and Data Mining Interaction (ADMI-14)*, May 5-9, 2014, Paris, France

*The 2014 IEEE/WIC/ACM International Conference on Web Intelligence*, August 11-14, 2014, Warsaw, Poland

*The 2014 IEEE/WIC/ACM International Conference on Intelligent Agent Technology*, August 11-14, 2014, Warsaw, Poland

*The 8th International Web Rule Symposium*, August 18-20, 2014, Prague, Czech Republic

*3rd International Conference on Data Management Technologies and Applications (DATA 2014)*, August 29-31, 2014, Vienna, Austria

*9th International Symposium on Advances in Artificial Intelligence and Applications (AAIA'14)*, September 7-10, Warsaw, Poland

*International Conference on Knowledge-Based and Intelligent Information & Engineering Systems*, September 15-17, Gdynia, Poland

*ECML/PKDD 2014 Conference*, September 15-19, Nancy, France

*7th IEEE Intelligent Systems'2014 Conference*, September 24-26, Warsaw, Poland

*6th International Conference on Knowledge Discovery and Information Retrieval*, October 14-16, 2014, Rome, Italy

*9th International Conference on Rough Sets and Knowledge Technology (RSKT 2014)*, October 24-26, 2014, Shanghai, China

*8th International Conference on Health Informatics*, January 12-15, 2015, Lisbon, Portugal

*6th International Conference on Pattern Recognition and Machine Intelligence (PReMI 2015)*, June 30 - July 3, 2015, Warsaw, Poland

*International Workshop on Machine Learning, Optimization and Big Data (MOD 2015)*, July 20 - July 24, 2015, Taormina (Sicily), Italy

*International Symposium on Foundations and Applications of Big Data Analytics (FAB 2015)*, August 27-28, 2015, Paris, France

*19th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems*, September 7-9, 2015, Singapore

*ECML PKDD 2015 the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, September 7-11, 2015, Porto, Portugal

*ECML/PKDD Workshop on New Frontiers in Mining Complex Patterns (NFMCP 2015)*, September 7-11, 2015, Porto, Portugal

*ICMMI 2015 International Conference on Man-Machine Interactions*, October 6-9, 2015, The Beskids, Poland

*2015 Joint Rough Set Symposium (JRS 2015)*, October 20-24, 2015, Seoul, Korea

*22nd International Symposium on Methodologies for Intelligent Systems*, October 21-23, 2015, Lyon, France

*10th Conference on Flexible Query Answering Systems*, October 26-28, 2015, Cracow, Poland

*The Fourth International Conference on Intelligent Systems and Applications (INTELLI 2015)*, October 11-16, 2015, St. Julians, Malta

*KDIR 2015, 7th International Conference on Knowledge Discovery and Information Retrieval*, 12-14 November, 2015, Lisbon, Portugal

*The 2015 IEEE/WIC/ACM International Conference on Web Intelligence*, December 6-9, 2015, Singapore

*9th International Conference on Health Informatics*, February 21-23, 2016, Rome, Italy

*The 21st International Conference on Database Systems for Advanced Applications (DASFAA 2016)*, April 16-19, 2016, Dallas, TX, USA

*International Symposium on Big Data Management and Analytics (BIDMA 2016)*, April 25-26, 2016, Calgary, Canada

*Beyond Databases, Architectures and Structures (BDAS)*, May 31 - June 3, 2016, Ustron, Poland

*10th International Web Rule Symposium (RuleML-2016)*, July 5-8, 2016, Stony Brook, NY, USA

*International Symposium on Foundations and Applications of Big Data Analytics (FAB 2016)*, August 20-21, 2016, Davis, CA, USA

*2nd Int. Workshop on Machine learning, Optimization and big Data*, August 26-29, 2016, Volterra, Tuscany, Italy

*ECML/PKDD 2016 the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, September 19-23, 2016, Riva del Garda, Italy

*5th International ECML-PKDD Workshop on New Frontiers in Mining Complex Patterns*, September 19-23, 2016, Riva del Garda, Italy (Workshop Co-Chair)

*International Joint Conference on Rough Sets (IJCRS 2016)*, October 7-11, 2016 in Santiago, Chile

*The Fifth International Conference on Data Analytics*, October 9-13, 2016 in Venice, Italy

*2016 IEEE/WIC/ACM International Conference on Web Intelligence (WI'16)*, October 13-16, 2016 in Omaha, Nebraska, USA (Program Co-Chair)

*8th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2016)*, 9-11 November, 2016, Porto, Portugal

*IEEE International Conference on Data Mining (ICDM 2016)*, December 13-15, 2016, Barcelona, Spain

*IEEE International Conference of Informatics, Health and Technology (ICIHT 2017)*, February 21-23, 2017, Riyadh, Saudi Arabia

*10th International Conference on Health Informatics*, February 21-23, 2017, Porto, Portugal

*International Symposium on Big Data Management and Analytics (BIDMA 2017)*, April 17-18, 2017, in Calgary, Canada

*The Third International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2017)*, April 23 - 27, 2017, in Venice, Italy

*Beyond Databases, Architectures and Structures (BDAS)*, May 30 - June 2, 2017, Ustron, Poland

*11th Conference on Flexible Query Answering Systems*, June 21-23, 2017, London, England (Advisory Committee)

*23rd International Symposium on Methodologies for Intelligent Systems*, June 26-29, 2017, Warsaw, Poland

*2017 International Joint Conference on Rough Sets (IJCRS'17)*, July 3-7, 2017, Olsztyn, Poland

*The 8th IEEE International Conference on Big Knowledge (IEEE ICBK 2017)*, August 9-10, 2017, Hefei, Anhui, China

*2017 IEEE/WIC/ACM International Conference on Web Intelligence (WI'17)*, August 23-27, 2017, Leipzig, Germany

*The Third International Workshop on Machine Learning, Optimization and Big Data (MOD 2017)*, September 14-17, 2017, Volterra, Tuscany, Italy

ECML-PKDD 2017, September 18-22, 2017, Skopje, Macedonia

*The Seventh International NFMCP Workshop (in conjunction with ECML-PKDD 2017)*, September 18-22, 2017, Skopje, Macedonia

*International Conference on Man-Machine Interactions (ICMMI'17)*, October 3-6, 2017, Cracow, Poland

*9th International Conference on Knowledge Discovery and Information Retrieval (KDIR'17)*, November 1-3, 2017, Funchal, Madeira - Portugal

*The Sixth International Conference on Data Analytics*, November 12 - 16, 2017 - Barcelona, Spain

*The Fourth International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2018)*, April 22-26, 2018, Athens, Greece

*International Joint Conference on Rough Sets (IJCRS 2018)*, August 20-24, 2018, Quy Nhon, Vietnam

*International Symposium on Foundations and Applications of Big Data Analytics (FAB 2018)*, August 28-31, 2018, Barcelona, Spain

*22nd International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2018)*, September 3-5, 2018, Belgrade, Serbia

ECML-PKDD 2018, September 10-14, 2018, Dublin, Ireland

*10th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2018)*, September 18-20, 2018, Seville, Spain

*IEEE International Conference on Data Mining (ICDM)*, November 17 - 20, 2018 - Singapore

*The Seventh International Conference on Data Analytics*, November 18 - 22, 2018 - Athens, Greece

*2018 IEEE/WIC/ACM International Conference on Web Intelligence*, December 3-8, 2018, Santiago, Chile (Steering Committee Member)

*The Fifth International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2019)*, March 24-28, 2019, Valencia, Spain

*Beyond Databases, Architectures and Structures (BDAS)*, 15th International Conference, May 28-31, 2019, Ustron, Poland

*International Joint Conference on Rough Sets (IJCRS 2019)*, June 17-21, 2019, Debrecen, Hungary

*13th International Conference on Flexible Query Answering Systems*, July 3-5, 2019, Amantea, Italy (Advisory Committee)

*14th International Symposium on Advances in Artificial Intelligence and Applications (AAIA'19)*, September 1-4, 2019, Leipzig, Germany

*The Fifth International Conference on Machine Learning, Optimization, and Data Science (LOD'19)*, September 10-13, 2019, Certosa di Pontignano, Siena - Tuscany, Italy

*11th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2019)*, September 17-19, 2019, Vienna, Austria

*The Eight International Conference on Data Analytics*, September 22 - 26, 2019, Porto, Portugal

*International Conference on Man-Machine Interactions (ICMMI 2019)*, October 1-4, 2019, Krakow, Poland

*IEEE International Conference on Data Mining (ICDM 2019)*, November 8-11, 2019, Beijing, China

*The 23rd International Conference on Business Information Systems (BIS'20)*, June 8-10, 2020, Colorado Springs, Colorado, USA

*International Joint Conference on Rough Sets (IJCRS 2020)*, June 29 - July 3, 2020, La Habana, Cuba

*The Sixth International Conference on Machine Learning, Optimization, and Data Science (LOD'20)*, July 19-22, 2020, Certosa di Pontignano, Siena - Tuscany, Italy

*The Ninth International Conference on Data Analytics*, July 26-30, 2020, Nice, France

*15th International Symposium on Advances in Artificial Intelligence and Applications (AAIA'20)*, September 6-9, 2020, Sofia, Bulgaria

*12th International Conference on Knowledge Discovery, Knowledge Engineering, and Knowledge Management (KDIR 2020)*, November 2-4, 2020, Budapest, Hungary

*20th IEEE International Conference on Data Mining (ICDM 2020)*, November 17-20, 2020, Sorrento, Italy

*24th International Conference on Business Information Systems*, June 15-17, 2021, Hannover, Germany

*14th International Conference on Flexible Query Answering Systems (FQAS 2021)*, September 19-24, 2021, Bratislava, Slovakia

*International Joint Conference on Rough Sets (IJCRS 2021)*, September 19-24, 2021, Bratislava, Slovakia

*13th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2021)*, October 25-27, 2021, Valletta, Malta

*21th IEEE International Conference on Data Mining (ICDM 2021)*, December 7-10, 2021, Auckland, New Zealand

*The 20th IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology*, December 14-17, 2021, Melbourne, Australia

*26th International Symposium on Methodologies for Intelligent Systems (ISMIS 2022)*, October 3-5, 2022, Cosenza, Italy

*The Tenth International NFMCP Workshop (in conjunction with ECML-PKDD 2022), September 19-23, 2022, Grenoble, France*

*IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology, November 17-20, 2022, Niagara Falls, Canada (Steering Committee Member)*

*IEEE International Conference on Data Mining (ICDM 2022), November 30 – December 3, 2022, Orlando, FL*

*14th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2022), October 24-26, 2022, Valletta, Malta*

## **ON-CAMPUS COMMITTEES AND ACTIVITIES (2005-22)**

### **In 2021- 2022:**

- KDD Laboratory Director
- CS TT Faculty Search Committee, Chair
- GAANN PIs Committee, Member
- PhD in Data Science Planning Committee, Member

### **In 2020- 2021:**

- KDD Laboratory Director
- Department Review Committee (DRC), Chair
- CS TT Faculty Search Committee, Co-Chair
- GAANN PIs Committee, Member
- PhD in Data Science Planning Committee, Member

### **In 2019- 2020:**

- KDD Laboratory Director
- CS TT Faculty Search Committee, Chair
- Department Review Committee (DRC), Member
- CS DRC for Post Tenure Cases, Chair
- UNC-Charlotte Faculty Council, Member
- Harshini V. de Silva Award Selection Committee, Member
- Curriculum Cohorts, Core Curriculum, Member
- Curriculum Cohorts, Data Science, Member
- GAANN PIs Committee, Member

### **In 2018- 2019:**

- KDD Laboratory Director
- Departmental Review Committee (DRC), Chair
- Harshini V. de Silva Award Selection Committee, Member
- CS Faculty Search Committee, Member
- GAANN PIs Committee, Member

### **In 2017- 2018:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director (Fall 2017)
- College Review Committee (CRC), Member
- CS Faculty Search Committee, Member
- Search Committee for BoA Position, Member
- Harshini V. de Silva Award Selection Committee, Member
- Faculty Advisory Library Committee (FALC), Alternate Member



**In 2016-2017:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- Department Review Committee (DRC), Member
- CS Faculty Search Committee (General Track and Data Science Track), Chair
- Harshini V. de Silva Award Selection Committee, Member
- CS PhD Admissions and Review Committee, Member
- Health Informatics Academic Program Committee, Member
- Faculty Advisory Library Committee (FALC), Alternate Member
- CCI Grade Appeal Committee, Member

**In 2015-2016:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CS PhD Admissions Committee, Member
- CS Faculty Search Committee, Member
- Health Informatics Program Committee, Member

**In 2014-2015:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CCI Review Committee (CRC), Member
- CS Faculty Search Committee, Member
- Teaching Review Committee, Member
- Health Informatics Program Committee, Member

**In 2013-2014:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CCI Review Committee (CRC), Chair
- CS Chair Search Committee, Member
- Teaching Review Committee, Member
- International Education Faculty Award Selection Committee, Member

**In 2012-2013:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- University Marshal, Fall 2012
- CCI Review Committee (CRC), Chair
- CS Faculty Search Committee, Member
- First Citizens Bank Scholars Award Selection Committee, Member
- International Education Faculty Award Selection Committee, Member

**In 2011-2012:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CS PhD Admissions and Review Committee, Member
- CS Department Review Committee (DRC), Member
- CS Faculty Search Committee, Member
- First Citizens Bank Scholars Award Selection Committee, Member
- International Education Faculty Award Selection Committee, Member

**In 2010-2011:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CS PhD Admissions and Review Committee, Member
- CS P&T Committee, Member
- CS Faculty Search Committee, Member
- First Citizens Bank Scholars Award Selection Committee, Member
- International Education Faculty Award Selection Committee, Member

**In 2009-2010:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CS Department Review Committee, Member

**In 2008-2009:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CCI Faculty President
- Computing & Informatics Advisory Committee (CIAC), Member
- CS P&T Committee, Chair
- O. Max Gardner Award Selection Committee, Member
- CCI Executive Committee, Chair
- API/CID Grants Committee, Member
- CS PhD Admissions & Review, Member
- CCI Graduate Committee, Member

**In 2007-2008:**

- KDD Laboratory Director
- ADKD Graduate Certificate Program Director
- CCI Faculty President-Elect
- P&T Committee, Member
- PhD Admissions & Review, Member
- CCI Executive Committee, Member
- CS Awards Committee, Member
- API/CID Grants Committee, Member
- Faculty Employment Status Committee, Member
- CS Faculty Search Committee, Member

**In 2006-2007:**

- Faculty Employment Status Committee, Member
- CS Department Review Committee, Member
- CS Department P&T Committee, Member
- ADKD Graduate Certificate Program Director
- KDD Laboratory Director
- FALC Alternate Member

**In 2005-2006:**

- CS Graduate Committee, Chair
- College Review Committee, Chair
- College P&T Committee, Member
- Faculty Council, Alternate Member
- International Education Award Selection Committee
- CS Awards Committee, Member

- ADKD Graduate Certificate Program Director
- KDD Laboratory Director
- COIT Graduate Committee, Member
- FALC Member, Alternate Member

**In 2004-2005:**

- P&T Committee, Chair
- Ph.D. in IT Program, Executive Committee, Member
- Ph.D. in IT Program, Admission Committee (CS Track), Chair
- ADKD Graduate Certificate Program Director
- KDD Laboratory Director
- Grade Review Committee, Chair
- FALC Member (Alternate)
- CID/API Grants Committee Member