Srinivas Akella

Department of Computer Science
University of North Carolina at Charlotte
9201 University City Boulevard
Charlotte, NC 28223
Citizenship: USA

Tel: (704) 687-8573
Email: sakella@uncc.edu
http://webpages.uncc.edu/sakella

RESEARCH INTERESTS:

Robotics and automation; Manipulation and motion planning; Multiple robot coordination; Digital microfluidics and biotechnology; Manufacturing and assembly automation; Bioinformatics and protein folding; Data analytics.

EDUCATION:

1996 **CARNEGIE MELLON UNIVERSITY,** Pittsburgh, PA.
Ph.D. in Robotics, School of Computer Science.
Thesis: ***Robotic Manipulation for Parts Transfer and Orienting:*** *Mechanics, Planning, and Shape Uncertainty.*
Advisor: Prof. Matthew T. Mason.

1993 **M.S.** in Robotics, School of Computer Science.

1989 **INDIAN INSTITUTE OF TECHNOLOGY, MADRAS**, India.
B.Tech. in Mechanical Engineering.

EXPERIENCE:

2009-present **UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE**, Charlotte, NC.
Professor, Department of Computer Science (2015-present).
Associate Professor, Department of Computer Science (2009-2015).

2000-2008 **RENSSELAER POLYTECHNIC INSTITUTE**, Troy, NY.
Assistant Professor, Department of Computer Science.
Senior Research Scientist, Department of Computer Science, and Center for Automation Technologies & Systems.

1996-1999 **UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN**, Urbana, IL.
Beckman Fellow, Beckman Institute for Advanced Science and Technology.

1989-1996	**CARNEGIE MELLON UNIVERSITY**, Pittsburgh, PA. **Research Assistant**, The Robotics Institute.
Summer 1992	**ELECTROTECHNICAL LABORATORY**, MITI, Tsukuba, Japan. **Summer Intern,** Intelligent Systems Division.

AWARDS:

2018	*CCI Excellence in Graduate Teaching Award*, College of Computing and Informatics, UNC Charlotte.
2007	Advisor, *Best Student Paper Awardee,* Robotics Science and Systems Conference.
2005	*Rensselaer Faculty Early Research Career Honoree*, RPI.
2001	*NSF CAREER Award*, National Science Foundation.
1999	*Finalist, Best Paper Award,* IEEE International Conference on Robotics and Automation.
1998	*Finalist, Anton Philips Best Student Paper Award*, IEEE International Conference on Robotics and Automation.
1996-1999	*Beckman Fellow*, Beckman Institute, UIUC.
1994-95	*Japanese Language Training Fellowship*, JSTMP, CMU.
Summer 1992	*Participant, Summer Institute in Japan*, National Science Foundation.
1989-90	*Tata Scholar*, J.N.Tata Endowment, Bombay.
1984-89	*National Talent Search Scholar*, Government of India.

FUNDING:

S. Akella (PI) and D. Collins (co-PI), REU Supplement, $16,000, January 2021-July 2022 to ***"PFI-TT: Intelligent Flight Planning of Multiple Drones for Power Line Inspection,"*** NSF, August 2019-July 2023.

S. Akella (PI), ***"Image Quality Assessment for Low Light Collision Scene Reconstruction using UAVs,"*** RTI International (DHS Science & Technology subcontract), $28,741, March 2020-July 2020.

P. Wang (PI), S. Akella (co-PI), M. Lee (co-PI), M. Dorodchi (co-PI), ***"NinerRobo: Towards Programmable Underwater Collaborative Robots System for Enhancing Research Capabilities and Undergraduate Research Experiences in Robotics,"*** CCI Innovation Fund, $20,000, December 2019-June 2020.

S. Akella (PI) and D. Collins (co-PI), ***"PFI-TT: Intelligent Flight Planning of Multiple Drones for Power Line Inspection,"*** NSF, $250,000, August 2019-July 2023.

M. C. Shin (PI), Co-PIs: S. Akella, H. Lipford, M. Shehab, Z. Ras, D.-M. Wilson, ***"The UNC Charlotte GAANN Fellowship Program in Computing and Information Systems,"*** US

Department of Education, $746,250, October 2018-September 2022.

S. Akella (PI) and M. Shin (co-PI), ***"Autonomous Robot Swarms for Urban Coverage,"*** DARPA, $431,652, September 2018-June 2019.

N. Pricope (PI) and Srinivas Akella (co-PI), ***"Synchronous Mapping of Coastal Habitat Change Using Multiple Unmanned Aerial Vehicles,"*** UNC Inter-institutional Planning Grant (IPG), $75,000, August 2018-June 2019.

S. Akella (PI), J. Eyerman (co-PI), and B. Mooring (co-PI), ***"Low Light Collision Scene Reconstruction,"*** NC Department of Transportation, $12,209, December 2017-March 2018.

J. Xiao (PI) and S. Akella (co-PI), ***"Equipment for Object Recognition and Robotic Manipulation,"*** ARO, $312,215, September 2017-September 2018.

S. Akella (PI) and J. Xiao (co-PI), ***"Software Solutions for Manufacturing,"*** Schaefer Systems International, $83,740, May 2017-May 2018.

S. Akella (PI) and J. Xiao (co-PI), ***"Software Solutions for Manufacturing,"*** Schaefer Systems International, $50,768, May 2016-May 2017.

S. Akella (PI), ***"EAGER: Cybermanufacturing: Smartphone Actuated Optical Lab-on-a-Chip Systems for Biomanufacturing and Analysis,"*** NSF, $150,000, September 2015-August 2017.

J. Xiao (PI) and S. Akella (co-PI), ***"I/UCRC Phase I: Robots and Sensors for the Human Well-being,"*** NSF, $325,000, September 2014-August 2019.

J. Xiao (PI) and S. Akella (co-PI), "***FRP for I/UCRC: Collaborative: Autonomous Perception and Manipulation in Search and Rescue,"*** NSF, $80,000, August 2014-August 2016.

J. Xiao (PI) and S. Akella (co-PI), ***"I/UCRC: New Site of I/UCRC Safety, Security and Rescue Research Center (SSR-RC),"*** NSF, $300,000, June 2013-May 2018.

J. Xiao (PI), S. Akella (co-PI), J. Fan (co-PI), S. Hardin (co-PI), "***EAGER: Data Analysis for Nursing Care Assistance***," NSF, $55,389, September 2012-August 2014.

S. Akella (PI), "***UNC Charlotte PSM on Business Analytics and Informatics***", North Carolina State University/Sloan Foundation, $6,000, February 2012- November 2014.

J. Xiao (PI), S. Akella (co-PI), J. Fan (co-PI), S. Hardin (co-PI): NSF Industry and University Collaborative Research Center (I/UCRC): "***Planning Grant: Joining I/UCRC Safety, Security, and Rescue Research Center***," $10,000, August 2011-July 2013.

Z. Su (PI) and S. Akella (Co-PI), ***"CiC (SEA): Large Scale Prediction of Transcription Factor Binding Sites for Gene Regulation using Cloud Computing,"*** NSF, $425,000, April 2011-September 2014.

S. Akella (PI), NSF REU-Supplement, $16,000, March 2011--July, 2012 to ``***III-CXT: Enabling Automated Digital Microfluidic Biochips for Combinatorial Biosynthesis and Screening***,'' NSF, February 2010-July 2012.

W. Wu (PI), S. Akella (co-PI), Z. Ras (co-PI), "***Normalization of Energy Use Data for Office Buildings with Smart Meters,***" Duke Energy, $38,000, January 2011-April 2011.

S. Akella (PI), "***Power Line Carrier*** (***PLC) Signal Analysis***," Duke Energy, $48,300, April 2010-February 2011.

S. Akella (PI), ***"Fully-Implicit Time Stepping Methods with Integrated Proximity Queries for Accurate Simulation of Multi-Rigid-Body Systems with Intermittent Contact,"*** $35,000, Oct 2010--Aug, 2012, NSF Award CCF-0729161 (Subaward No. A11888).
(Originally: S. Akella (PI) and J. C. Trinkle (co-PI), ``Fully-Implicit Time Stepping Methods with Integrated Proximity Queries for Accurate Simulation of Multi-Rigid-Body Systems with Intermittent Contact'', NSF, $200,000, September 2007-August 2010.)

S. Akella (PI), ``III-CXT: Enabling Automated Digital Microfluidic Biochips for Combinatorial Biosynthesis and Screening," NSF, $331,260, February 2010-July 2012.
(Originally: S. Akella (PI) and R. J. Linhardt (Co-PI), ``III-CXT: Enabling Automated Digital Microfluidic Biochips for Combinatorial Biosynthesis and Screening," NSF, $449,995, August 2007-July 2010.)

S. Akella (Co-PI), J. S. Dordick (PI), R. J. Linhardt (Co-PI), ``Digital Microfluidic Artificial Golgi for Glycan Synthesis'', NSF, $300,000, June 2007-May 2010.

S. Akella (PI), C. Busch (co-PI), J. S. Dordick (co-PI), R. J. Linhardt (co-PI), ``CRI:IAD: A Digital Microfluidic Testbed for Combinatorial Biosynthesis and Screening'', NSF, $299,960, August 2007-July 2010.

S. Akella (PI), ``Automated Ophthalmoscope Spot Image Classification'', Welch Allyn Inc., $30,000, Dec. 2007-Mar. 2008.

S. Akella (PI), ``Quattro Optimization'', Electro Scientific Industries, $60,000, July 2006-June 2007.

S. Akella (PI) and M. K. Goldberg (co-investigator), ``SGER: Towards Automated Droplet Coordination in Digital Microfluidic Systems,'' NSF, $100,000, July 2005-December 2006.

S. Akella (PI), ``CAREER: Manipulation and Motion Planning of Articulated Objects,'' NSF, $399,793, May 2001-April 2007.

S. Akella (PI), REU Supplement to ``CAREER: Manipulation and Motion Planning of Articulated Objects,'' NSF, $6,000, June 2004-April 2007.

S. Akella (PI), Flexible Parts Feeding for Automated Assembly and Packing, Motorola Corporate Manufacturing Research Center, 1996-97, $18,500.

S. Akella, S. Hutchinson, J. Ponce, N. Ahuja, G. DeJong, C. Hayes, N. Srinivasa, AdeptOne robot

and Flexfeeder, Beckman Foundation Equipment Grant, UIUC 1997, $80,000.

S. Akella and J. Ponce, Fabrication of Robotic Parts Orienting device, Beckman Foundation Equipment Grant, UIUC, 1999, $10,260.

PATENTS:

S. Akella and V. Shekar, *Microfluidic Devices and Applications Thereof*, U. S. Patent No. 10,611,627, issued April 7, 2020.

Z. Ma and S. Akella, *Method for coordination of droplets on light-actuated digital microfluidic systems*, U. S. Patent No. 10,118,175, issued November 6, 2018.

Z. Ma and S. Akella, *Method for coordination of droplets on light-actuated digital microfluidic systems*, U. S. Patent No. 9,782,775, issued October 10, 2017.

V. Shekar and S. Akella, *Microfluidic Devices and Applications Thereof*, U.S. Patent No. 9,643,835, issued May 9, 2017.

E. Griffith and S. Akella, *Method, System, and Program Product for Controlling Chemical Reactions in a Digital Microfluidic System*, U. S. Patent No. 7,693,666, issued April 6, 2010.

S. Akella, S. J. Blind, C. McCullough, J. Ponce, *Automated reconfigurable object manipulation device with an array of pins,* U. S. Patent No. 6,633,797, issued October 14, 2003.

TEACHING:

Design and Analysis of Algorithms (ITCS-2215): Spring 2011, Fall 2013, Spring 2015, UNCC

Algorithms and Data Structures (ITCS 6114/8114): Fall 2010, Fall 2011, Spring 2013, Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2020, Fall 2021, Spring 2022, UNCC

Big Data Analytics for Competitive Advantage (DSBA 6100): Spring 2014, UNCC
Codeveloped a new introductory graduate course on the use of big data for business advantage.

Cloud Computing for Data Analysis (new ITCS 6190/8190): Spring 2009, Spring 2010, Spring 2012, Fall 2014, Fall 2015, Fall 2016, Spring 2017, Fall 2017, Fall 2018, Fall 2019, Fall 2020, Fall 2021, UNCC

Developed a new combined graduate and undergraduate course on parallel computing for analysis of large data sets.

Intelligent Robotics (ITCS 6151/8151): Spring 2019, UNCC

Redesigned introductory graduate course on robotics.

Robot Motion Planning (new ITCS 6152/8152): Fall 2001, Fall 2003, Fall 2005, RPI; Spring 2010, Fall 2012, Spring 2016, Spring 2018, Spring 2021, UNCC; Summer 2017 GIAN course at IIT

Madras

Developed and introduced a new combined graduate and undergraduate course on algorithmic techniques for robot motion planning.

3D Computer Graphics: Fall 2000, Fall 2002, Fall 2004, Fall 2006, RPI

Developed and introduced a new undergraduate course on three-dimensional computer graphics.

Data Structures & Algorithms: Spring 2001, Spring 2002, Spring 2003, Spring 2004, Spring 2006, RPI

Taught and enhanced a core sophomore course on data structures and algorithms.

Geometric Algorithms: Spring 2000, RPI

Developed and introduced a new combined graduate and undergraduate course on computational geometry.

STUDENTS SUPERVISED:

Saurav Agarwal, Ph.D. student in Computer Science, *Generalized Coverage using Multiple Robots: Theory, Algorithms, and Experiments,* UNC Charlotte, June 2022.

Sayantan Datta, Ph.D. student in Computer Science, *Multi-robot Environment Modeling*, UNC Charlotte, August 2017-present.

Kalvik Jakkala, Ph.D. student in Computer Science, *Bayesian Estimation and Submodular Optimization for Informative Path Planning*, UNC Charlotte, July 2020 – present.

Zhiqiang Ma, Ph.D. student in Computer Science, *Topic Models for Tagged Text*, UNC Charlotte, December 2014.

Vasanthsekar Shekar, M.S. in Electrical and Computer Engineering, *Low-Voltage, Multiple-Axis Droplet Manipulation in Open Surface Optoelectrowetting Microfluidic Devices*, UNC Charlotte, May 2012.

Rakesh Rao, M.S. in Computer Science, *Power Line Carrier (PLC) Signal Analysis of Smart Meters for Outlier Detection*, UNC Charlotte, December 2011.

Junjie Shan, Ph.D. student in Computer Science, *Human Action Recognition and Robotic Aids for Human Safety*, UNC Charlotte, August 2011-August 2014.

Youjie Zhou, Ph.D. student in Computer Science, *Cloud Computing for Bioinformatics*, UNC Charlotte, August 2010-May 2012.

Vikas Gandham, M.S. in Computer Science, *Cloud Computing for Bioinformatics*, UNC Charlotte, August 2012-August 2013.

Aparna Kulkarni, M.S. student in Computer Science, *Robot Motion Planning*, UNC Charlotte, June 2010-September 2010.

Jufeng Peng, Ph.D. in Mathematical Sciences, RPI, *Multiple Robot Coordination: A Mathematical Programming Approach,* May 2005. (Awarded the Joaquin B. Diaz Memorial Prize in Mathematics, RPI.)

Nilanjan Chakraborty, Ph.D. in Computer Science, RPI, *Optimization Approaches for Geometric Constraints in Robot Motion Planning*, October 2008. (Awarded the Robert McNaughton Prize in Computer Science, RPI.)

Lingzhi Luo, M. S. in Computer Science, RPI, *Optimal Scheduling and Minimum Resource Characterization of Biochemical Analyses on Digital Microfluidic Systems,* July 2008.

Megha Gupta, M.S. in Computer Science, RPI, *A Scheduling and Routing Algorithm for Digital Microfluidic Ring Layouts with Bus-Phase Addressing,* April 2008.

Evan Shechter, M. S. in Computer Science, RPI, *Towards Design and Fabrication of Magnetically Self-Assembled Microstructures,* July 2007.

Arjun Arumbakkam, M.S. in Computer Science, RPI, *Towards Parallel Assembly of 3D Microstructures Using Magnetically Actuated MEMS Panels*, August 2006.

Yogesh Girdhar, M.S. in Computer Science, RPI, *Efficient Sampling of Protein Folding Funnels using HMMSTR and Pathway Generation using Probabilistic Roadmaps*, April 2005.

Jufeng Peng, M.S. in Computer Science, RPI, *Optimal Control of Multiple Robot Systems with Friction using Mathematical Programs with Complementarity Constraints*, August 2004. Co-thesis advisor: Mihai Anitescu (Argonne National Lab.).

Liang Lu, (co-supervised with Seth Hutchinson), *Folding Cartons with Fixtures*, M.S., Electrical and Computer Engg., UIUC, May 1999.

Sebastien J. Blind, (co-supervised with Jean Ponce), *Automated Programming of a Reconfigurable Part Feeder*, M.S., Computer Science, UIUC, May 1999.

Postdoctoral Researchers Supervised

Sourav Rakshit, *Stability Analysis and Motion Paths for Mechanical Assembly and Disassembly,* Dept. of Computer Science, UNC Charlotte, March 2012-February 2014.

Undergraduate Researchers Supervised

Matthew Campbell, Bachelors in Software and Information Systems, UNC Charlotte, 2012.
Parker Colson Dunlap, Bachelors in Computer Science, UNC Charlotte, 2012.
Jessica Lu, Bachelors in Computer Science, UNC Charlotte, 2015.
Tarun Ravada, Bachelors in Computer Science, UNC Charlotte, 2019.
Prakruthi Reddy, Bachelors in Computer Science, UNC Charlotte, 2019.
Derrick Zipperer, Bachelors in Computer Science, UNC Charlotte, 2021.
Sam Crane, Bachelors in Computer Engineering, UNC Charlotte, 2021.
Lauren Wylie, Bachelors in Computer Science, UNC Charlotte, 2021.
Adam Hudson, Bachelors in Computer Engineering, UNC Charlotte, 2022.
Ninh Nguyen, Bachelors in Computer Science, UNC Charlotte, 2022.

PUBLICATIONS:

Book:

1. S. Akella, N. M. Amato, W. H. Huang, B. Mishra, Editors, ***Algorithmic Foundations of Robotics VII***, Springer Tracts in Advanced Robotics, Springer-Verlag, 2008.

Refereed Journal Papers:

1. Saurav Agarwal and Srinivas Akella, ***"Area Coverage with Multiple Capacity-Constrained Robots,"*** *IEEE Robotics and Automation Letters,* Vol. 7, No. 2, pp. 3734--3741, April 2022. Selected for presentation at the *IEEE International Conference on Robotics and Automation*, Philadelphia, USA, May 2022.

2. Kalvik Jakkala and Srinivas Akella, "***Probabilistic Gas Leak Rate Estimation using Submodular Function Maximization with Routing Constraints***," *IEEE Robotics and Automation Letters*, Vol. 7, No. 2, pp. 5230-5237, April 2022. Selected for presentation at the *IEEE International Conference on Robotics and Automation*, Philadelphia, USA, May 2022.

3. Cynthia Gibas, Kevin Lambirth, Neha Mittal, Md Ariful Islam Juel, Visva Bharati Barua, Lauren Roppolo Brazell, Keshawn Hinton, Jordan Lontai, Nicholas Stark, Isaiah Young, Cristine Quach, Morgan Russ, Jacob Kauer, Bridgette Nicolosi, Don Chen, Srinivas Akella, Wenwu Tang, Jessica Schlueter, and Mariya Munir, ``***Implementing building-level SARS-CoV-2 wastewater surveillance on a university campus,***'' *Science of The Total Environment*, Vol. 782, pp. 146749, March 2021.

4. S. Rakshit and S. Akella, ``***The Influence of Motion Path and Assembly Sequence on the Stability of Assemblies,***'' *IEEE Transactions on Automation Science and Engineering*, Vol. 12, No. 2, pp. 615-627, April 2015.

5. N. Chakraborty, S. Berard, S. Akella, and J. C. Trinkle, ``***A Geometrically-Implicit Time-Stepping Method for Multibody Systems with Intermittent Contact,***'' *International Journal of Robotics Research*, Vol. 33, No. 3, pp. 426–445, March 2014.

6. L. Luo and S. Akella, ``***Optimal Scheduling for Biochemical Analyses on Digital Microfluidic Systems,***'' *IEEE Transactions on Automation Science and Engineering*, Vol. 8, No. 1, pp. 216-227, January 2011.

7. N. Chakraborty, S. Akella, and J. T. Wen, ***"Coverage of a Planar Point Set with Multiple Robots subject to Geometric Constraints,"*** *IEEE Transactions on Automation Science and Engineering*, Vol. 7, No. 1, pp. 111-122, January 2010.

8. J. G. Martin, M. Gupta, Y. Xu, S. Akella, J. Liu, J. S. Dordick, R. J. Linhardt,, ``***Towards an Artificial Golgi: Redesigning the Biological Activities of Heparan Sulfate on a Digital Microfluidic Chip,***" *Journal of the American Chemical Society*, Vol. 131, No. 31, pp. 11041-11048,

July 2009.

9. N. Chakraborty, J. Peng, S. Akella, and J. Mitchell, ``***Proximity Queries between Convex Objects: An Interior Point Approach for Implicit Surfaces,***'' *IEEE Transactions on Robotics*, Vol. 24, No. 1, pp. 211-220, February 2008.

10. E. J. Griffith, S. Akella, and M. K. Goldberg, ***"Performance Characterization of a Reconfigurable Planar Array Digital Microfluidic System,"*** *IEEE Transactions on Computer-Aided Design of Integrated Circuits And Systems*, Special issue on Design Automation Methods and Tools for Microfluidics-Based Biochips, Vol. 25, No. 2, pp. 340-352, February 2006.

11. E. J. Griffith and S. Akella, ***"Coordinating Multiple Droplets in Planar Array Digital Microfluidic Systems,"*** *International Journal of Robotics Research*, Vol. 24, No. 11, pp. 933--949, November 2005.

12. J. Peng and S. Akella, "***Coordinating Multiple Robots with Kinodynamic Constraints along Specified Paths***," *International Journal of Robotics Research*, Vol. 24, No. 4, pp. 295-310, April 2005.

13. S. Blind, C. C. McCullough, S. Akella, and J. Ponce, *"**Manipulating Parts with an Array of Pins: A Method and a Machine,***" *International Journal of Robotics Research,* Vol. 20, No. 10, pp. 808-818, October 2001.

14. S. Akella and M. T. Mason, *"**Orienting Toleranced Polygonal Parts,***" *International Journal of Robotics Research,* Vol. 19, No. 12, pp. 1147-1170, December 2000.

15. L. Lu and S. Akella, *"**Folding Cartons with Fixtures: A Motion Planning Approach,***" *IEEE Transactions on Robotics and Automation,* Vol. 16, No. 4, pp. 346-356, August 2000.

16. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, "***Parts feeding on a conveyor with a one joint robot***," *Algorithmica* (Special Issue on Robotics), Vol. 26, No. 3/4, pp. 313-344, March/April 2000.

17. S. Akella and M. T. Mason, "***Using Partial Sensor Information to Orient Parts***," *International Journal of Robotics Research*, Vol. 18, No. 10, pp. 963-997, October 1999.

18. S. Akella and M. T. Mason, "***Posing polygonal objects in the plane by pushing***," *International Journal of Robotics Research*, Vol. 17, No.1, pp. 70-88, January 1998.

Refereed Conference Papers:

1. Saurav Agarwal and Srinivas Akella, *"**The Correlated Arc Orienteering Problem,***" 15th International Workshop on the Algorithmic Foundations of Robotics, College Park, MD, USA, June 2022.

2. S. Datta and S. Akella, ``***Prioritized Indoor Exploration with a Dynamic Deadline,***" 2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Prague, Czech Republic, September 2021.
3. S. Agarwal and S. Akella, "***Approximation Algorithms for the Single Robot Line Coverage Problem,***" 14th International Workshop on the Algorithmic Foundations of Robotics, Oulu, Finland, June 2020.
4. S. Agarwal and S. Akella, "***Line Coverage with Multiple Robots,***" IEEE International Conference on Robotics and Automation, Paris, France, pp. 3248-3254, May 2020.
5. A. Parnami, P. Bavi, D. Papanikolaou, S. Akella, M. Lee and S. Krishnan, "***Deep Learning Based Urban Analytics Platform: Applications to Traffic Flow Modeling and Prediction,***" 3rd Mining Urban Data Workshop (MUD3), London, UK, August, 2018.
6. S. Agarwal and S. Akella, "**Simultaneous Optimization of Assignments and Goal Formations for Multiple Robots,**" *IEEE International Conference on Robotics and Automation,* pp. 6708-6715, Brisbane, Australia, May 2018.
7. S. Akella, "***Assignment Algorithms for Variable Robot Formations***," 2016 International Workshop on Algorithmic Foundations of Robotics (WAFR 2016), San Francisco, CA, December 2016.
8. S. Rakshit and S. Akella, "***A Trajectory Optimization Formulation for Assistive Robotic Devices***," IEEE International Conference on Robotics and Automation, pp. 2068-2074, Stockholm, Sweden, May 2016.
9. J. Shan and S. Akella, "***3D Human Action Segmentation and Recognition using Pose Kinetic Energy,***" 2014 IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO 2014), pp. 69-75, Chicago, IL, September 2014.
10. Z. Ma, W. Dou, X. Wang, and S. Akella, ``***Tag-Latent Dirichlet Allocation: Understanding Hashtags and Their Relationships,***" IEEE/WIC/ACM International Conference on Web Intelligence, pp. 260-267, Atlanta, GA, November 2013.
11. S. Rakshit and S. Akella, ``***The Influence of Motion Path and Assembly Sequence on the Stability of Assemblies,*** Robotics Science and Systems Conference, Berlin, Germany, June 2013.
12. V. Shekar, M. Campbell, and S. Akella, **"*Towards Automated Optoelectrowetting on Dielectric Devices for Multi-Axis Droplet Manipulation*"** IEEE International Conference on Robotics and Automation, pp. 1431-1437, Kahlsruhe, Germany, May 2013.
13. Z. Ma and S. Akella, **"*Coordination of Droplets on Light-Actuated Digital Microfluidic***

Systems," IEEE International Conference on Robotics and Automation, pp. 2510-2516, St. Paul, MN, May 2012.

14. R. Rao, S. Akella, and G. Guley, ``***Power Line Carrier (PLC) Signal Analysis of Smart Meters for Outlier Detection,***" Second IEEE International Conference on Smart Grid Communications, pp. 309-314, Brussels, Belgium, October 2011.

15. N. Chakraborty, S. Akella, and J. C. Trinkle, ``***Complementarity-based Dynamic Simulation for Kinodynamic Motion Planning,***" 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), pp. 787-794, St. Louis, October 2009.

16. L. Luo and S. Akella, ``***Minimum Resource Characterization of Biochemical Analyses for Digital Microfluidic Biochip Design,***" In Algorithmic Foundations of Robotics VIII (WAFR 2008), Gregory S. Chirikjian, Howie Choset, Marco Morales, and Todd Murphey (editors), pp. 567-581, Springer-Verlag, 2010.

17. N. Chakraborty, S. Akella, and J. T. Wen, ***"Minimum Time Point Assignment for Coverage by Two Constrained Robots,"*** IEEE International Conference on Robotics and Automation, pp. 1378-1383, Pasadena, CA, May 2008.

18. L. Luo and S. Akella, ``***Optimal Scheduling for Biochemical Analyses on Digital Microfluidic Systems***," 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 3151-3157, San Diego, CA, October 2007.

19. M. Gupta and S. Akella, ``***A Scheduling and Routing Algorithm for Digital Microfluidic Ring Layouts with Bus-phase Addressing,***" 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 3144-3150, San Diego, CA, October 2007.

20. E. Shechter, A. Arumbakkam, P. Lamoureux, X. Tang, M. Shima, and S. Akella, ``***Sequential Assembly and Layout Planner with New Hard Magnet Configuration Towards Batch Fabrication and Assembly of 3D Microstructures***," 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 584-589, San Diego, CA, October 2007.

21. N. Chakraborty, S. Akella, and J. T. Wen, ***"Coverage of a Planar Point Set with Multiple Constrained Robots,"*** IEEE Conference on Automation Science and Engineering, pp. 899-904, Scottsdale, AZ, September 2007.

22. N. Chakraborty, S. Berard, J. Trinkle, and S. Akella, ``***An Implicit Compliant Model for Multibody Systems with Frictional Intermittent Contact,***" ASME 2007 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, DETC2007-35526, Las Vegas, NV, September 2007.

23. N. Chakraborty, S. Berard, S. Akella, and J. C. Trinkle, ``***An Implicit Time-Stepping Method for Multibody Systems with Intermittent Contact,***" Robotics: Science and Systems conference (RSS 2007), pp. 177-184, Atlanta, GA, June 2007. **(Awarded Best Student Paper Award.)**

24. E. J. Griffith, S. Akella, and M. K. Goldberg, ``***Performance Characterization of a Reconfigurable Planar Array Digital Microfluidic System,***'' In *Design Automation Methods and Tools for Microfluidics-Based Biochips*, K. Chakrabarty and J. Zeng (editors), Springer, 2006.

25. N. Chakraborty, J. Peng, S. Akella, and J. Mitchell, ``***Proximity Queries between Convex Objects: An Interior Point Approach for Implicit Surfaces,***" 2006 IEEE International Conference on Robotics and Automation, pp. 1910-1916, Orlando, FL, May 2006.

26. E. Griffith and S. Akella, "***Coordinating Multiple Droplets in Planar Array Digital Microfluidics Systems,***'' *Algorithmic Foundations of Robotics VI* (WAFR 2004), M. Erdmann, D. Hsu, M. Overmars, and A. F. van der Stappen (editors), pp. 219-234, Springer-Verlag, Berlin, 2005.

27. J. Peng and S. Akella, ***"Coordinating Multiple Double Integrator Robots on a Roadmap: Convexity and Global Optimality,***'' 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, pp. 2762-2769, April 2005.

28. S. Akella and J. Peng, "***Time-Scaled Coordination of Multiple Manipulators,***'' 2004 IEEE International Conference on Robotics and Automation, pp. 3337-3344, New Orleans, LA, April 2004.

29. J. Peng, M. Anitescu, and S. Akella, "***Optimal Control of Multiple Robot Systems with Friction Using MPCC,***'' 2004 IEEE International Conference on Robotics and Automation, pp. 5224-5231, New Orleans, LA, April 2004.

30. J. Peng and S. Akella, ***"Coordinating Multiple Robots with Kinodynamic Constraints along Specified Paths,***" *Algorithmic Foundations of Robotics V* (WAFR 2002), J.-D. Boissonnat, J. Burdick, K. Goldberg, and S. Hutchinson (editors), pp. 221-237, Springer-Verlag, Heidelberg, Germany, 2003.

31. J. Peng and S. Akella, "***Coordinating the Motions of Multiple Robots with Kinodynamic Constraints,***'' 2003 IEEE International Conference on Robotics and Automation, pp. 4066-4073, Taipei, Taiwan, September 2003.

32. S. Akella and S. Hutchinson, ''***Coordinating the Motions of Multiple Robots with Specified Trajectories,***" 2002 IEEE International Conference on Robotics and Automation, pp. 624-631, Washington D.C., May 2002.

33. S. J. Blind, C. C. McCullough, S. Akella, and J. Ponce, "***A Reconfigurable Parts Feeder with an Array of Pins***," 2000 IEEE International Conference on Robotics and Automation, pp. 147-153, San Francisco, CA, April 2000.

34. S. Blind, C. McCullough, S. Akella, and J. Ponce, ''***Manipulating Parts with an Array of Pins: A Method and a Machine,***'' *Robotics Research: The Ninth International Symposium,* pp. 123-130, John M. Hollerbach and Daniel E. Koditschek (editors), Springer-Verlag, London, 2000.

35. L. Lu and S. Akella, ***"Folding Cartons with Fixtures: A Motion Planning Approach,"*** 1999 IEEE International Conference on Robotics and Automation, pp. 1570-1576, Detroit, MI, May

1999. **(Finalist, Best Conference Paper Award.)**

36. S. Akella and M. T. Mason, "***Parts Orienting with Shape Uncertainty***," 1998 IEEE International Conference on Robotics and Automation, pp. 565-572, Leuven, Belgium, May 1998. **(Finalist, Anton Philips Best Student Paper Award.)**

37. S. Akella and M. T. Mason, "***Parts Orienting with Partial Sensor Information***," 1998 IEEE International Conference on Robotics and Automation, pp. 557-564, Leuven, Belgium, May 1998.

38. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, "***Sensorless parts feeding with a one joint robot***," In *Algorithms for Robotic Motion and Manipulation*, J.-P. Laumond and M. Overmars, eds., pp. 229-237, A.K. Peters, Boston, MA, 1997.

39. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, "***Planar manipulation on a conveyor with a one joint robot***," In *Robotics Research: The Seventh International Symposium*, G. Giralt and G. Hirzinger, eds., pp. 265-276, Springer, Berlin, 1996.

40. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, ***"Sensorless parts orienting with a one-joint manipulator,"*** 1997 IEEE International Conference on Robotics and Automation, pp. 2383-2390, Albuquerque, NM, April 1997.

41. S. Akella and M. T. Mason, "***Parts orienting by push-aligning***," 1995 IEEE International Conference on Robotics and Automation, pp. 414-420, Nagoya, Japan, May 1995.

42. S. Akella and M. T. Mason, "***Posing polygonal objects in the plane by pushing***," 1992 IEEE International Conference on Robotics and Automation, pp. 2255-2262, Nice, France, May 1992.

Refereed Posters and Video Proceedings:

1. Y. Girdhar, C. Bystroff, S. Akella, E. Carlson, ***"Efficient Sampling of Protein Folding Pathways using HMMSTR and Probabilistic Roadmaps"***, (poster), 2005 IEEE Computational Systems Bioinformatics Conference (CSB 2005), Stanford, California, August 2005.
2. Y. Shao, M. Magdon-Ismail, D. Freedman, S. Akella, M. Zaki, and C. Bystroff, ***"Compressing Protein Conformational Space"***, (poster), Sixth International Conference on Research in Computational Molecular Biology (RECOMB 02), Washington D.C., April 2002.
3. S. J. Blind, C. C. McCullough, S. Akella and J. Ponce, ***"A Reconfigurable Parts Feeder with an Array of Pins,"*** Video Proceedings of the 2000 IEEE International Conference on Robotics and Automation, San Francisco, CA, April 2000.
4. L. Lu and S. Akella, ***"Folding Cartons with Fixtures,"*** Video Proceedings of the 1999 IEEE International Conference on Robotics and Automation, Detroit, MI, May 1999.
5. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, ***"Planar Manipulation on a Conveyor with a One Joint Robot,"*** Video Proceedings of the 1997 IEEE International Conference on Robotics and Automation, Albuquerque, NM, April 1997.

Other Publications:

1. J. Eyerman, B. Mooring, M. Catlow, S. Datta, and S. Akella, *"**Low-light Collision Scene Reconstruction using Unmanned Aerial Systems,**"* RTI International, Research Triangle Park, NC, and University of North Carolina at Charlotte, Charlotte, NC, May 2018.

2. S. Akella, "***Packaging of Motorola Two-Way Radios: Efficient Layouts, Automation, and Defect Reduction,***" Beckman Institute, University of Illinois at Urbana-Champaign, August 1997.

3. S. Akella, "***Robotic Manipulation for Parts Transfer and Orienting**: Mechanics, Planning, and Shape Uncertainty,*" Advisor: Prof. Matthew T. Mason, Carnegie Mellon University, Technical Report CMU-RI-TR-96-38, December 1996.

4. S. Akella, W. H. Huang, K. M. Lynch, and M. T. Mason, "***From robotic juggling to robotic parts feeding,***" Yale Workshop on Adaptive and Learning Systems, New Haven, CT, June 1996.

5. M.T. Mason, S. Akella, and K. M. Lynch, "***New results in pushing***," Proceedings of the 1993 NSF Design Systems Grantees Conference, Charlotte, NC, January 1993.

PROFESSIONAL LEADERSHIP ACTIVITIES:

Editor	Robotica, Cambridge University Press, March 2012-present
Associate Editor	IEEE Transactions on Automation Science and Engineering, July 2003-May 2007
Guest Editor	International Journal of Robotics Research, Special issue from the 2006 Workshop on Algorithmic Foundations of Robotics (WAFR 2006), Vol. 27, No. 11-12, November 2008
Area Chair	2009 Robotics Science and Systems Conference (RSS 2009)
Co-chair	2006 Workshop on the Algorithmic Foundations of Robotics (WAFR 2006)
Associate Editor	IEEE Robotics and Automation Society Conference Editorial Board, 2007 IEEE International Conference on Robotics and Automation (ICRA 2007)
Program Cmte.	IEEE International Conference on Robotics and Automation (ICRA 2022, ICRA 2020, ICRA 2019, ICRA 2018, ICRA 2017, ICRA 2016, ICRA 2015, ICRA 2014, ICRA 2013, ICRA 2012, ICRA 2006, ICRA 2004) Robotics Science and Systems Conference (RSS 2006, RSS 2010, RSS 2011, RSS 2014, RSS 2015, RSS 2017, RSS 2018, RSS 2020) IEEE International Conference on Automation Science and Engineering (IEEE CASE 2006, IEEE CASE 2005)

	IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2007, IROS 2005, IROS 2004, IROS 2003)
	Fourteenth Workshop on Algorithmic Foundations of Robotics (WAFR 2020)
	Twelfth Workshop on Algorithmic Foundations of Robotics (WAFR 2016)
	Ninth Workshop on Algorithmic Foundations of Robotics (WAFR 2010)
	Fourth Workshop on Algorithmic Foundations of Robotics (WAFR 2000)
	SPIE Mechatronics for Agile Manufacturing Conference, 1999.
Guest editor	Manufacturing Automation, special issue of the SPIE Robotics newsletter, Vol. 6, Issue 1, April 1997.
Member	IEEE Transactions on Automation Science and Engineering Steering Committee, May 2002-July 2003
	IEEE Robotics and Automation New Transactions Committee, December 2001-May 2002
	Tutorials and workshops committee, 2000 IEEE International Conference on Robotics and Automation.
	Workshops and Tutorials Evaluation Committee, 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
Session chair	2012, 2006, 2004, 1999, 1997, and 1995 IEEE Conferences on Robotics and Automation.
	2009 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
	Seventh Workshop on Algorithmic Foundations of Robotics (WAFR 2006)
	Fifth Workshop on Algorithmic Foundations of Robotics (WAFR 2002)
Reviewer	IEEE Transactions on Robotics and Automation, IEEE Transactions on Robotics, International Journal of Robotics Research, IEEE Conferences on Robotics and Automation, IEEE International Workshop on Advanced Robotics and its Social Impacts, NSF panels on Robotics and Human Augmentation; Computer Graphics; Manufacturing Machines and Equipment, US-Israel Binational Science Foundation, ASME Design for Manufacturing Conference, ACM Symposium on Computational Geometry, Robotica, International Journal of CAD/CAM, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, IEEE Transactions on Systems, Man, and Cybernetics.
Team member	Xavier mobile robot team, AAAI-93 Robot Competition.
Secretary	Mechanical Engineering Association (1987-88), IIT Madras.
Member	ACM, ASME, IEEE, Sigma Xi.

INVITED TALKS:

October 2020	NC Dept. of Transportation Research & Innovation Summit (online) *Inspecting Road Networks using Multiple UAVs.*
February 2020	College of Computing and Informatics, UNC Charlotte *Covering Lines with Multiple UAVs.*
October 2019	Center for Applied GIScience (CAGIS), UNC Charlotte *Geographic Inspection with Multiple UAVs.*
November 2018	4th Unmanned Aircraft Systems (UAS) for Utility Applications Workshop, Electric Power Research Institute (EPRI), Charlotte, NC. *Towards Power Line Inspection using Multiple UAS.*
October 2014	Beckman Institute 25th Anniversary Symposium, University of Illinois at Urbana-Champaign, IL. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
November 2012	Dept. of Electrical Engineering, University of Texas at Arlington, TX. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
September 2012	NSF I/UCRC Safety, Security, Rescue Research Center Spring Symposium. *Lab-on-a-Chip Technology: From Robots to Microdroplets.*
February 2011	Robotics and Energetic Systems Group, Oak Ridge National Lab, TN. *Proximity Queries, Kinodynamic Motion Planning, & Coordinating Multiple Robots.*
January 2011	Dept. of Computer Science and Information Science, BITS Hyderabad, India. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
January 2011	Dept. of Computer Science and Engineering, IIT Hyderabad, India. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
January 2011	Dept. of Computer Science and Engineering, IIIT Hyderabad, India. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
March 2010	Dept. of Ind. Engg. and OR, Univ. of California, Berkeley, CA. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
April 2009	Dept. of Computer Science, Univ. of North Carolina, Chapel Hill, NC. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
March 2009	RSS 2009 Area Chairs Workshop, Univ. of Washington, Seattle, WA. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
November 2008	Dept. of Computer Science, Indian Institute of Science, Bangalore, India. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
November 2008	Central Manufacturing Technology Institute, Bengaluru, India. *Digital Microfluidic Biochips: Algorithms and Applications.*

May 2008	Dept. of Computer Science, University of California, Irvine, CA. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
May 2008	Dept. of Computer Science, Stanford University, Stanford, CA. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
March 2008	Dept. of Computer Science, Univ. of Southern California, Los Angeles, CA. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
December 2007	School of Engineering, University of California, Merced, CA. *Enabling Digital Microfluidic Systems.*
June 2007	Palo Alto Research Center, Palo Alto, CA. *Enabling Digital Microfluidic Systems.*
April 2007	College of Computing and Informatics, Univ. of North Carolina, Charlotte, NC. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
March 2007	General Electric Global Research Center, Niskayuna, NY. *Enabling Digital Microfluidic Systems.*
November 2006	NASA Ames Research Center, Moffett Field, California. *Coordinating Multiple Moving Objects: From Robots to Microdroplets.*
July 2006	Wadsworth Center, NY State Department of Health, Albany, New York. *Enabling Digital Microfluidic Systems.*
March 2006	Workshop on CAD Aspects of Biochips 2006 Design, Automation, and Test in Europe (DATE) conference, Munich. *Droplet Coordination in Digital Microfluidic Systems.*
January 2005	International Workshop on Motion Planning in Virtual Environments (MOVIE), LAAS-CNRS, Toulouse. *Coordinating Multiple Robots with Dynamics Constraints.*
January 2004	Workshop on the Geometry of Modelling Proteins, Bellairs, Barbados. *Challenges in Using Motion Planning for Protein Folding.*
October 2003	IEEE Transactions on Automation Science and Engineering Open Forum, IROS

2003, Las Vegas.
Challenging Automation Problems.

June 2003 — Dept. of Mechanical Engineering, Indian Institute of Science, Bangalore, India.
Minimalist Robotic Systems for Flexible Manufacturing: Feeding and Folding Objects.

May 2003 — Beckman Fellows Symposium, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign.
Coordinating the Motions of Multiple Robots.

April 2000 — Workshop on Flexible Parts Feeding and Fixturing, ICRA 2000, San Francisco.
Manipulation and Motion Planning for Automated Packaging.

May 1999 — Dept. of Computer Science and Engg., Penn. State Univ., State College, PA.
Robot Algorithms for Minimalist Manipulation.

April 1999 — Dept. of Electrical Engineering, University of Washington, Seattle, WA.
Minimalist Robotic Systems for Flexible Automation.

April 1999 — Math and Computing Technology Lab, Boeing, Seattle, WA.
Minimalist Robotic Systems for Flexible Manufacturing.

April 1999 — Dept. of Mechanical, Industrial & Mnfg. Engg., Univ. of Toledo, Toledo, OH.
Minimalist Robotic Systems for Flexible Manufacturing.

April 1999 — Dept. of Computer Science, Rensselaer Polytechnic Institute, Troy, NY.
Robot Algorithms for Minimalist Manipulation.

April 1999 — Dept. of Mechanical Engineering, Texas A&M University, College Station, TX.
Minimalist Robotic Systems for Flexible Manufacturing.

March 1999 — Dept. of Computer Science, Texas A&M University, College Station, TX.
Robot Algorithms for Minimalist Manipulation.

March 1999 — Dept. of Mechanical Engineering, University of Kentucky, Lexington, KY.
Minimalist Robotic Systems for Flexible Manufacturing.

March 1999 — Dept. of Mechanical & Aerospace Engg., Rutgers University, Piscataway, NJ.
Minimalist Robotic Systems for Flexible Manufacturing.

March 1999 — Intelligent Systems & Robotics Ctr., Sandia National Lab, Albuquerque, NM.
Minimalist Robotic Systems for Flexible Manufacturing.

March 1999 — Dept. of Computer Science, University of New Mexico, Albuquerque, NM.

Robot Algorithms for Minimalist Manipulation.

March 1999 — Dept. of Mechanical Engineering, Iowa State University, Ames, IA.
Minimalist Robotic Systems for Flexible Manufacturing.

November 1998 — Dept. of Industrial Engg. & Operations Research, U. California, Berkeley, CA.
Linear and Nonlinear Programming Formulations for Parts Feeding.

June 1998 — Center for Artificial Intelligence and Robotics, Bangalore, India.
Parts Orienting with Partial Sensor Information.

June 1998 — Satyam Computers, Hyderabad, India.
Robotics and Computer Vision.

March 1998 — Dept. of Mechanical Engineering, Johns Hopkins University, Baltimore, MD.
Parts Orienting with Partial Sensor Information.

January 1997 — Engineering Staff College of India, Hyderabad, India.
Robotics and Computer Vision Technologies for India.

August 1996 — Motorola Corporate Research Center, Schaumburg, IL.
Parts Feeding on a Conveyor with a One Joint Robot.

April 1996 — Dept. of Manufacturing Engineering, Boston University, Boston, MA.
Robotic Parts Transfer and Orienting for Flexible Assembly.

October 1995 — College of Computing, Georgia Institute of Technology, Atlanta, GA.
Robotic Manipulation for Parts Feeding (Guest lecture, Robotics course).

May 1995 — NTT Human Interface Laboratory, Musashino, Japan.
Parts Orienting by Push-aligning.

May 1995 — Fujitsu Multimedia Systems Laboratory, Kawasaki, Japan.
Parts Orienting by Push-aligning.

July 1992 — NTT Human Interface Laboratory, Musashino, Japan.
Posing Objects in the Plane by Pushing.

June 1992 — Intelligent Systems Division, Electrotechnical Laboratory, Tsukuba, Japan.
Posing Objects in the Plane by Pushing.

SERVICE AND LEADERSHIP AT UNCC:

Chair, CCI Reappointment, Promotion, and Tenure Committee, 2017 – 2018
CCI Faculty President, 2014-2015
Chair, CCI Faculty Executive Committee, 2014-2015
Chair, CCI Reappointment, Promotion, and Tenure Committee, 2010 – 2011
CCI Reappointment, Promotion, and Tenure Committee, 2009 – 2012, 2018 – 2019, 2020 - 2021

Planning Committee, PhD in Analytics, 2016-2018
Co-chair, Planning Committee, PSM in Data Science and Business Analytics, 2011-2013
Advisory committee for PSM on Data Science and Business Analytics, 2013-present

IT Ph.D. CS Track Coordinator, 2009 - 2013
CS Ph.D. Admission and Review Committee, 2009 – 2013, 2015-2016
IT Ph.D. Steering Committee, 2009 – 2013
Chair, IT Ph.D. Steering Committee, 2010 – 2012

CCI Research Committee, 2014-2016
Chair, CCI Graduate Curriculum Committee, 2013-2014
CCI Graduate Curriculum Committee, 2012-2013
Health IT Program Committee (CCI and CHHS), 2009–2010

Chair, CS Faculty Search Committee, 2020-2021
Chair, CS Department Review Committee, 2016-2017, 2019-2020
Chair, CS Special Appointment Faculty Department Review Committee, 2019-2020
Chair, CS Computing and Facilities Committee, 2019-2020
CS Faculty Search Committee, 2019-2020, 2021-2022
CS Department Review Committee, 2013-2014, 2015-2016, 2021-2022
CS Bank of America Chair Search Committee, 2018, 2021-2022
CS Faculty Search Committee, 2017-2018
CS Systems Faculty Search Committee, 2016-2017
Chair, CS Department Computing and Facilities Committee, 2019-2020
CS Department Library Liaison, 2012-2017
CS Department Ad-hoc Space Committee, 2014-2015
Full Professor Recruiting Committee, CS Department, 2010-2011
CS Department Retreat Committee, 2009
CS Department Strategic Planning Committee, 2009 - 2010
CCI Teaching Award Committee, 2009
CCI Research Award Committee, 2009
CCI Ad-hoc Space Committee, 2009
Organizer, CS Junior Faculty Mentoring Program, 2021-

Member, Faculty Employment Status Committee, UNC Charlotte, 2020-2022
UNC Charlotte NC FIRST Robot Competition Organizing Committee, 2015-2016
Judge, Charlotte Research Scholars Symposium, 2015-2016
Senior faculty mentor, NSF CAREER/CRII Writing Group, Spring 2018, Spring 2019, Spring 2020
Faculty presenter, OPD/CCI seminar on Doing Business with DARPA, November 2018