

ZHONGYU LI

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🎓 EDUCATION

University of North Carolina at Charlotte, Charlotte, USA 2015/08 – Present

Ph.D. student in Computer Science

Research Interests: Neuronal Morphology, Medical Image Analysis, Computer Vision, Machine Learning

Advisor: Shaoting Zhang

Xi'an Jiaotong University, Xi'an, China 2012/08 – 2015/06

M.E. in Software Engineering

Thesis: Study and Implementation on Fully Automatic Registration for Multi-view Point Clouds

Advisor: Jihua Zhu

Xi'an Jiaotong University, Xi'an, China 2008/08 – 2012/07

B.E. in Automation

🔍 RESEARCH EXPERIENCE

Large-scale Medical Image Analytics 2016/08 – Present

- Developed a multi-task deep neural network for the automated diagnosis of diabetic retinopathy;
- Grading and segmentation for the diagnosis of diabetic retinopathy (DR).
- Comprehensive review recent advances for the large-scale retrieval of medical image analytics.

Computational Exploration of Neuronal Morphology 2015/08 – Present

- Efficient discovery of relevant instances among large-sized neuron databases;
- Fine-grained representation for the computational analytics of 3D neuronal morphology;
- Intelligent and interactive knowledge discovery using augmented reality (AR) techniques.

Point Cloud Registration and 3D Reconstruction 2013/08 – 2015/06

- Multi-view registration for the 3D reconstruction of unordered range scans;
- Further improve the registration accuracy by designing a coarse-to-fine approach;
- Improving the robustness of pair-wise registration using genetic algorithm.

📖 PUBLICATION

Journal

- Zhongyu Li, Xiaofan Zhang, Henning Müller, Shaoting Zhang, “Large-scale Retrieval for Medical Image Analytics: A Comprehensive Review”, *Medical Image Analysis*, 43: 64-84, 2018. (IF=4.188, JCR 二区)
- Zhongyu Li, Dimitris N. Metaxas, Aidong Lu, Shaoting Zhang, “Interactive Exploration for Continuously Expanding Neuron Databases”, *Methods*, 115: 100-109, 2017. (IF=3.802, JCR 二区)
- Zhongyu Li, Ruogu Fang, Fumin Shen, Amin Katouzian, Shaoting Zhang, “Indexing and Mining Large-Scale Neuron Databases using Maximum Inner Product Search”, *Pattern Recognition*, 63: 680-688, 2017. (IF=4.582, JCR 二区)
- Zhongyu Li, Erik Butler, Kang Li, Aidong Lu, Shuiwang Ji, Shaoting Zhang, “Large-scale Exploration of Neuronal Morphologies using Deep Learning and Augmented Reality”, *Neuroinformatics*, 2018. (IF=3.200, JCR 二区)
- Jihua Zhu, Zhongyu Li, Shaoyi Du, Liang Ma, Te Zhang, “Surface reconstruction via efficient and accurate registration of multiview range scans”, *Optical Engineering*, 53(10): 1-8, 2014. (IF=1.028)
- Jihua Zhu, Deyu Meng, Zhongyu Li, Shaoyi Du, Zejian Yuan, “Robust registration of partially overlapping point sets via genetic algorithm with growth operator”, *IET Image Processing*, 8(10): 582-590, 2014. (IF=1.044)

Conference

- Zhongyu Li, Chaowei Fang, Shaoting Zhang, “Deep Feature Representation for the Computational Analytics of 3D Neuronal Morphology”, in the *Proceeding of the IEEE International Symposium on Biomedical Imaging (ISBI)*, 2018.
- Zhongyu Li, Fumin Shen, Ruogu Fang, Sailesh Conjeti, Amin Katouzian, Shaoting Zhang, “Maximum Inner Product Search for Morphological Retrieval of Large-Scale Neuron Data”, in the *Proceeding of the IEEE International Symposium on Biomedical Imaging (ISBI)*, 2016. **Oral presentation**
- Zhongyu Li, Jihua Zhu, Ke Lan, Chen Li, Chaowei Fang, “Improved Techniques for Multi-view Registration with Motion Averaging”, in the *International Conference on 3D Vision (3DV)*, 2014.
- Bin Kong, Xin Wang, Zhongyu Li, Qi Song, Shaoting Zhang, “Cancer Metastasis Detection via Spatially Structured Deep Network”, in the International Conference on Information Processing in Medical Imaging (IPMI), 2017.

PROJECT

- NSF-ABI Innovation: Towards Computational Exploration of Large-Scale Neuro-Morphological Datasets, UNC Charlotte
- NSF-II-New: Collaborative: A Mixed Reality Environment for Enabling Everywhere Data-Centric Work, UNC Charlotte
- NSFC: Study of Grid Map Merging Based on Point Set Registration, Xi’an Jiaotong University, 2013-2015

SERVICE

- **Reviewer:**
Neurocomputing
IEEE Transactions on Human-Machine Systems

AWARDS

- *Research Assistant Scholarship*, UNC Charlotte 2015-2018
- *Excellent Graduate*, Xi’an Jiaotong University 2015
- *Fuji Xerox Fellowship*, Xi’an Jiaotong University 2014