

JIAXIANG REN

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EDUCATION

Stony Brook University, NY, U.S.

Aug. 2019 - Present

Ph.D. Candidate in Computer Science

Advisor: Professor Haibin Ling, Professor Yingtian Pan

Tongji University, Shanghai, China

Sep. 2015 - Apr. 2018

M.S. in Computer Science & Technology

Advisor: Professor Shengjie Zhao

Thesis: The Research on the Sparse-based Subspace Clustering Algorithm in High-dimensional Data

Tongji University, Shanghai, China

Sep. 2011 - Jun. 2015

B.Eng. in Computer Science & Technology

Overall GPA: 4.02/5.00, Major GPA: 4.39/5.00

Thesis: Randomized Algorithms for Matrices and Big Data

RESEARCH INTEREST

Computer Vision, Machine Learning, Image Segmentation, and 3D Image Denoising

PUBLICATION

Jiaxiang Ren, Kicheon Park, Yingtian Pan, and Haibin Ling. “Self-Supervised Bulk Motion Artifact Removal in Optical Coherence Tomography Angiography,” in *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2022.

Yingtian Pan, Kicheon Park, **Jiaxiang Ren**, Nora D. Volkow, Haibin Ling, Alan P. Koretsky, and Congwu Du. “Dynamic 3D Imaging of Cerebral Blood Flow Networks in Awake Mice using Ultrahigh-resolution Optical Coherence Doppler Tomography,” accepted by *Nature Communications Biology*.

Jiaxiang Ren, Zhilin Zou, Zhenghong Li, Kicheon Park, Yingtian Pan, and Haibin Ling. “Self-supervised 3D Skeleton Completion for Curvilinear Structures,” under preparing.

Yasha Singh, Vivek Atulkar, **Jiaxiang Ren**, Jie Yang, Heng Fan, Longin Jan Latecki, and Haibin Ling. “Osteoporosis Prescreening and Bone Mineral Density Prediction using Dental Panoramic Radiographs,” in *Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, 2021.

Jiaxiang Ren, Heng Fan, Jie Yang, and Haibin Ling. “Detection of Trabecular Landmarks for Osteoporosis Prescreening in Dental Panoramic Radiographs,” in *Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, 2020.

Jiaxiang Ren, Shengjie Zhao, Kai Yang, and Brian Zhao. “A Novel and Robust Face Clustering Method via Adaptive Difference Dictionary,” in *IEEE International Conference on Multimedia & Expo Workshops (ICMEW)*, 2017.

WORK EXPERIENCE

Research Assistant

Jun. 2020 - Present

CV Lab Stony Brook University

Research on image denoising, segmentation, and 3D visualization.

Teaching Assistant
Stony Brook University
CSE 310, Computer Networks, Fall 2019 & Spring 2020

Aug. 2019 - May 2020

Algorithm Engineer
Computer Vision Group, Ping An Technology

May 2018 - Jul. 2019

- Plant Recognition AI: Medicinal Herb Classification Subtask (Fine-grained Classification)
Implementing an interpretable classification model to discern similar herbs with high accuracy and recall.
- AI Diagnostic Platform (Computer-aided Diagnosis)
Developing neural networks for the classification and segmentation with X-ray and CT images, aiding doctors in the diagnose of diseases. Product is integrated into the AI Diagnostic Platform.

RESEARCH EXPERIENCE

3D Denoising and Enhancement for Optical Coherence Tomography Jan. 2021 - Present
Interdisciplinary Project, with Dr. Haibin Ling and Dr. Yingtian Pan Stony Brook University

- Denoising and improving the imaging quality of optical coherence tomography system for the microvasculature of rodent cortex.
- Proposing an unsupervised method for Bulk Motion Artifacts removal.

Osteoporosis Research in Dental Panoramic Radiography Sep. 2019 - Dec. 2020
Research Project, with Dr. Haibin Ling CV Lab, Stony Brook University

- Designing an automatic osteoporosis prescreening system for dental panoramic radiography images.
- Proposing a trabecular landmark detector in dental panoramic radiography images.
- Predicting bone mineral density for potential osteoporosis patients.

Deep Learning based Data Mining on Oceanic Big Data Sep. 2017 - Mar. 2018
Interdisciplinary Project, with Dr. Shengjie Zhao, Dr. Samuel Cheng Tongji University

- Developing a platform to analysis oceanic data, including the detection and recognition of marine life, image denoising and inpainting.
- Developing deep neural networks for object retrieval and fine-grained classification.

Traffic Sign Detection in Automatic Driving Scene Oct. 2016 - Nov. 2016
Graduate Researcher, with Dr. Shengjie Zhao, Dr. Samuel Cheng ESSC Lab, Tongji University

- Improving the neural networks based detector for the traffic signs detection in the real world scenes.
- Participating in the Datafountain Competition sponsored by UISEE.

Social Network Management System on Mobile Devices Oct. 2012 - Oct. 2014
Shanghai Undergraduate Innovation Project, App Developer, with Dr. Wei Wang Tongji University

- Developing an Android app for better management of the messages from several social networks, such as Sina Weibo, Renren and Tencent WBlog.

SELECTED HONORS

- Excellent Graduate of Shanghai, China 2018
- The ENN Energy Scholarship, China 2017

SKILLS

Programming Languages	Python, C/C++, MATLAB, Java, SQL, JSP, Shell, Assembly
Deep Learning Toolboxes	PyTorch, TensorFlow, Keras, Caffe