JIAXIANG REN

Department of Computer Science ◇ Stony Brook University ◇ NY 11794

Tel.: (631) 891-8280 ◇ Email: jiaxren@cs.stonybrook.edu ◇ Web: `https://reckdk.github.io`

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, Deep Learning, and Machine Learning

· Medical Image Recognition and 3D Segmentation, and Landmark Detection

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," under review at *Nature Communications.*

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 medical image recognition and 3D visualization.

Teaching Assistant *Aug. 2019 - May 2020*
Stony Brook University
CSE 310, Computer Networks, Fall 2019 & Spring 2020

Algorithm Engineer *May 2018 - Jul. 2019*
Computer Vision Group, Ping An Technology

- 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

Optical Coherence Tomography based Imaging and Denoising 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 convolutional 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