JIAXIANG REN

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EDUCATION

Tongji University, Shanghai, China *September 2015 - April 2018*
M.S. in Computer Science & Technology
Overall GPA: 86.2/100.0, Advisor: Professor Shengjie Zhao
Thesis: The Research on the Sparse-based Subspace Clustering Algorithm in High-dimensional Data

Tongji University, Shanghai, China *September 2011 - June 2015*
B.Eng. in Computer Science & Technology
Overall GPA: 4.02/5.00, Major GPA: 4.39/5.00, Rank: 26/150
Thesis: Randomized Algorithms for Matrices and Data

RESEARCH INTEREST

· Object Detection and Segmentation, Face Recognition, 3D Reconstruction

· Deep Learning, Unsupervised Learning, Sparse Approximation

PUBLICATION

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

RESEARCH EXPERIENCE

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

· Project aims at developing platform to analysis oceanic data, including the detection and recognition of marine life, image denoising and inpainting.
· Developed convolutional neural networks for object retrieval and fine-grained classification.

3D Semantic Scene Completion March 2017 - June 2017
Graduate Researcher, with Dr. Shengjie Zhao *ESSC Lab, Tongji University*

· Project aims at completing the 3D semantic scene from the depth image
· Introduced a post-processing module and aggregated it into an end-to-end network to improve the precision about 6.1% and the Intersection-over-union about 2.3%.
· Redesigned the 3D semantic completion network to fit the requirement of GPU memory.

Traffic Sign Detection in Automatic Driving Scene October 2016 - November 2016
Graduate Researcher, with Dr. Samuel Cheng *ESSC Lab, Tongji University*

· Project aims at detecting traffic sign in the real world scenes.
· Participated in the Datafountain Competition sponsored by UISEE.
· Adopted and improved the convolutional neural networks based detector for the traffic signs detection in the real world scenes. Final rank: 38/393.

Neural-Style Based Style Transfer Platform September 2016 - October 2016
Graduate Researcher *Tongji University*

· Project aims at deploying a web server of neural-style transformer based on deep learning.
· Designed and deployed a neural-style based style transfer platform using a web server to collect and send the pictures to the Tensorflow model in the back end, image resolution up to 2K.

Randomized Algorithm for Matrices and Data February 2015 - October 2016
Undergraduate Researcher, with Dr. Shengjie Zhao, Dr. Kai Yang *Tongji University*

· Project aims at adopting randomized algorithms in other fields where data are usually high dimentional.
· Implemented the randomized algorithm to reduce the dimension of the high dimensional data.
· Proposed a randomized subspace clustering algorithm for face clustering.

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

· Developed an Android app to better manage the messages from several social networks, such as Sina Weibo, Renren and Tencent WBlog.

WORK EXPERIENCE

Algorithm Engineer May 2018 - July 2019
Computer Vision Group, Ping An Technology

· **Plant Recognition AI: Medicinal Herb Classification Subtask (Fine-grained Classification)**
Implemented classification models to discern similar herbs with high accuracy and recall. Used gradient-based class activation mapping for visual explanations of models.
· **Medical Images Recognition and Diagnose (Computer-aided Diagnosis)**
Developed convolutional neural networks for the classification and segmentation with X-ray and CT images, which aid doctors in the diagnose of diseases.
· **RSNA Pneumonia Detection Challenge (Kaggle, Rank 39/1499, Top 3%)**
Combined the state-of-the-art CNN detectors (such as YOLOv3, SNIPPER, Cascade-RCNN, RetinaNet), also with techniques such as Hard Negative Mining and multi-tasks learning, to draw bounding boxes around pneumonia areas.

Graduate Research Assistant September 2015 - March 2018
ESSC Lab, Tongji University

· Research on computer vision and big data.

SELECTED HONORS

· Excellent Graduate of Shanghai, China 2018
· The ENN Energy Scholarship, China 2017
· The 13th National Postgraduate Mathematic Contest in Modeling, *third-prize*, China 2016
· The 29th National College Physics Competition (Shanghai), *third-prize*, China 2012
· Provincial Outstanding Students, China (Top 0.2‰) 2011

SKILLS

Programming Languages Python, C/C++, MATLAB, Java, SQL, JSP, Shell, Assembly
Libraries PyTorch, TensorFlow, Keras, Caffe, cuDNN, Marvin