

SHENAO ZHANG

Wushan Campus, South China University of Technology

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EDUCATION

South China University of Technology

Guangzhou, China

B.Eng. Information Engineering (Expected in July 2020)

August 2016 - Present

School of Electronic and Information Engineering

Innovation class (40 students elected from more than 450 students in the whole school)

Overall GPA: 3.56/4.00, [transcripts](#)

Major GPA (weighted average on 100 scale): 90.0/100 (Ranking: 2/40)

Sophomore ranking: 3/40, Junior ranking: 2/40

University of California, Berkeley

Berkeley, CA

Visiting student

January 2019 - May 2019

Department of Electrical Engineering and Computer Sciences

GPA: 3.90/4.00, [transcripts](#)

PUBLICATIONS

- [1] **Shenao Zhang**, Li Shen, Mingkui Tan. [Multi-task multi-agent reinforcement learning with latent space intention](#), will submit to Advances in Neural Information Processing Systems (**NeurIPS**), 2020.
- [2] **Shenao Zhang**, Xin He, Bo Wu, Delu Zeng. [Coarse-to-fine Attention for Object Detection](#), will submit to ACM Multimedia (**MM**) 2020.
- [3] **Shenao Zhang**, Li Shen, Zhifeng Li, Wei Liu. [Structure-Regularized Attention Networks](#), under review at European Conference on Computer Vision (**ECCV**), 2020.
- [4] Dazheng Hu, Huabiao Qin, Hongmei Liu, **Shenao Zhang**. [Gaze Tracking Algorithm Based on Projective Mapping Correction and Gaze Point Compensation in Natural Light](#), accepted by IEEE International Conference on Control and Automation (**ICCA**), 2019.

RESEARCH EXPERIENCE

Structure-Regularized Attention

August 2019 - December 2019

Computer Vision Group, [Tencent AI Lab](#)

Shenzhen, China

Research Intern, advised by Senior Research Scientist Li Shen

- Proposed a new attention mechanism which includes a novel formulation of local attention and a novel mode attention to capture long-range dependencies through a structural manner
- Conducted a series of empirical ablation studies and visualized to validate the approach outperforms state-of-the-art algorithms on person re-identification and face recognition tasks
- Wrote paper as first author, which has submitted to IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2020
- Wrote invention patents, under review for authorization

Coarse-to-fine Attention for Object Detection

May 2019 - July 2019

Department of Computer Science, Columbia University

New York, NY

Research Assistant, co-advised by Professor Delu Zeng and Research Scientist Bo Wu

- Proposed a coarse-to-fine attention mechanism
- Validate our approach with proof
- Conducted experiments to validate our attention mechanism on CIFAR-10 and object detection tasks
- Wrote paper as first author, which will submit to ACM MM 2020.

Gaze Tracking Algorithm

October 2018 - February 2019

Smart Vision Research Lab, South China University of Technology

Guangzhou, China

Research Assistant, advised by Prof. Huabiao Qin

- Proposed a head posture projective correction method
- Contributed to experiments of gaze point compensation
- Wrote experiment part of our paper, which has been accepted by IEEE International Conference on Control and Automation (ICCA), 2019

Reversible Data Hiding Scheme for Encrypted JPEG Bitstreams

May 2018 - November 2018

Information Security Lab, South China University of Technology

Guangzhou, China

Research Assistant, advised by Prof. Junhui He

- Contributed to developing the reversible data hiding scheme for encrypted JPEG images based on invariant zero-run length in the zero-run value pairs
- Implemented the program in C, contributed over 3,000-line high-quality codes, and enabled the program to work in both Windows and Ubuntu systems
- Analyzed computational complexity and file size change of different schemes

Smart Home System

September 2017 - September 2018

Smart Vision Research Lab, South China University of Technology

Guangzhou, China

Research Group Leader, Student Research Program, advised by Prof. Huabiao Qin

- Conducted publishing two datasets containing face images and sound recording of the elderly under different conditions, designing neural networks to identify their physical and emotional conditions
- Proposed an energy based graph convolutional networks to help model motion abnormalities
- Implemented signal processing and deep learning algorithms
- Contributed to UI program in C++ on the Qt platform and led system code testing

INTERNSHIP EXPERIENCE

Tencent

August 2019 - Present

Research Intern at Computer Vision Group, [Tencent AI Lab](#)

Shenzhen, China

GoldenSun Co.

June 2017 - August 2017

Software Engineer Intern, Cloud and Industries Department

Zhengzhou, China

- Contributed more than 2,000 lines of code for robust robot arm control

SELECTED CURRICULUM PROJECT EXPERIENCE

Computer Graphics

January 2019 - May 2019

Advisor: Prof. Ren Ng, Prof. Jonathan Ragan-Kelley

University of California, Berkeley

- Final project: Cloth Simulation using OpenGL Shader, [project website](#)
- Projects of Rasterizer, MeshEdit, PathTracer, Physical Simulation, code and reports can be found [here](#)

Artificial Intelligence

January 2019 - May 2019

Advisor: Prof. Stuart Russell, Prof. Sergey Levine

University of California, Berkeley

- Projects including Searching algorithms, Multi-Agent Pacman, Reinforcement Learning, Probabilistic Graphical Models, Game Tree. Code can be found [here](#)

Fingerprint Recognition

November 2018 - January 2019

Final project of Machine Vision & Intelligent Detection

South China University of Technology

- Used MATLAB to implement algorithms for feature extracting and image processing
- Designed and implemented fingerprint matching algorithm

Parking Lot Information Management System

September 2017 - November 2017

Advisor: Prof. Jianwei Zhang

South China University of Technology

- Developed information management system for parking lots to manage drivers' information

- Used C++ to implement the programs for access management and developed a friendly UI

HONORS AND REWARDS

Second Prize in 2018 Undergraduate Electronics Design Contest	<i>2018</i>
Third Prize in 2018 Intel Cup AI theme Undergraduate Embedded System Design Contest	<i>2018</i>
First Prize in 2017 Robot Cup Undergraduate Robotics Competition	<i>2017</i>
Outstanding Freshmen Scholarships (Awarded to 20 among 6,500 students)	<i>2016</i>

SKILLS

Programming skills: Python, C, C++, MATLAB, PyTorch, TensorFlow, Caffe, OpenCV, LaTeX
Experienced in software development on Linux and Windows

COMMUNITY ENGAGEMENT

Teaching Assistant of Signals & Systems	<i>Spring 2018</i>
Head Teaching Assistant of Digital Signal Processing	<i>Fall 2018</i>
Vice-minister at Social Practice Department of Student Union	
Being awarded the title of Star-level Volunteer for 100+ hours of volunteering	