

Guoming Li

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■ Research Interests

- Deep Learning on Graph and its application on real-world
- Graph Signal Processing and Denoising
- Graph Topology Inference

■ Education Background

B.Eng in Information Engineering, South China University of Technology, China Sep 2016 – Jun 2020

- Thesis: Deep learning method in Super-Resolution
- CGPA: 3.66 / 4.0 (**Top 20% in 250+ students, Merit Graduate Award**)
- Selected Courses: Data Structure(88), Basic Theory of Information(88), Electromagnetic Fields and Waves(91), Signal and System, Digital Signal Processing, Digital Image Processing

(Non-degree) Postgrad Courses study, University of Chinese Academy of Sciences, China Sep 2021 - Jul 2022

- Major: Social Computing (AI + Network Science)
- CGPA: 3.57 / 4.0 (One-year courses, all about AI and Applied Math)
- Selected Courses: Multivariate Statistical Analysis(93), Functional Analysis(95), Machine Learning, Deep Learning, Pattern Recognition

■ Project(new to old)

Neural Parametric Modeling of Human Hand Sep 2022 – present

- Co-worker: J Yang at CASIA, China
- (**CVPR2023 submission**) A cooperative research project. I am co-first author to the paper. We focused on a problem about point cloud inference (interpolation and extrapolation). I helped to write half of the paper and implement one of the Projection-Net with python.

Network Topology Inference with Graph Learning Jun 2022 – present

- Mentor: Prof D.S Luo at Florida International University(FIU), USA
- This topic is just one of the sub-problems of my big idea about Graph Signal Processing. I proposed the main idea and designed the model. I am now cooperating with Prof. Luo and concentrated on solve this sub-problem.

Network epidemic dynamic model of COVID-19 in China Dec 2020 – Jul 2021

- Mentor: Prof Z Cao at CASIA, China
- Modeling the network epidemic processes of COVID-19 in China. Using Matlab to implement SEIR、SIR、SEIRD models which fitted the epidemic data in China and building mobility dataset with Python-Spider.

Deep learning method in Super-Resolution Nov 2019 – May 2020

- Mentor: Prof J.L Shi at South China University of Technology(SCUT), China
- This is my undergraduate thesis. I tried to find out what and how the factors in input-data influence the efficiency of the algorithm based on paper *Image super-resolution using deep convolutional networks*. (Dong et al, 2016)

Image style transfer apps (for mobile device) Mar 2019 – Jul 2019

- Co-workers: D Wang, K.B Chen at South China University of Technology(SCUT), China

Update in Dec 1st, 2022

- All deep learning modules were implemented by myself. MS-COCO dataset and VGG-14 backbone were used to train the model and got different Style Gram Matrices, which could be used to image style transfer at our online server. **However, our online server had been terminated now.**

■ Research Experience(new to old)

(Remote) research internship in Florida International University(FIU)

Jun 2022 – present

- Mentor: Prof D.S Luo at Florida International University(FIU), USA
- Topic: Graph Topology Inference and Graph Signal Denoising
- Proposing the idea and leading the research project. Now focusing on a sub-question about bridging the gap between GTI(Graph Topology Inference) and GSL(Graph Structure Learning). My goal is to solve a problem about denoising on both Graph Structure and Graph Signal at the same time.

Research Assistant in Institute of Automation, Chinese Academy of Sciences(CASIA)

Full-time: Dec 2020 – Jul 2021; **Part-time:** Aug 2021 – Jun 2022

- Mentor: Prof Z Cao at CASIA, China
- Topic: Epidemic dynamic of COVID-19 and (Complex) Network Science
- Extracting spatial-temporal data of COVID-19 and creating a dataset with Python-Spider, independently using Matlab to implement SEIR、SIR、SEIRD models which fitted the epidemic data in China.

Student Research Assistant in Image Processing Group(SCUT)

Mar 2018 – Nov 2019

- Mentor: Prof X Xing at South China University of Technology(SCUT), China
- Topic: Image processing with deep learning
- Required to implement some papers about Image processing with Pytorch about style-transfer, and compare their performance in MS-COCO dataset, also required to do the data pre-processing.

■ Research Publications

- **Neural Parametric Modeling of Human Hand.** Jian Yang*, Guo-ming Li*, Weize Quan, Qihang Fang, Keqiang Li, Dong-ming Yan, Zhen Shen, Xiong Gang, Huai-Yu Wu, Fei-Yue Wang, et al. (**CVPR2023 submission**)

■ Coding Skills

- **Python**, (Proficient in using Pytorch and other packages about AI, and also I can use Python.Spider as the crawler to get data from Internet.)
- **C++**, (Proficient)
- **Matlab**, (Proficient)

■ Awards

- The Chinese Mathematics Competitions, **The third prize**, 2017, **The second prize**, 2018
- Contemporary Undergraduate Mathematical Contest in Modeling, **The third prize**, 2018
- SCUT Second-class Scholarship, **The second prize**, 2017,2018
- “Hong-ping-chang-qing” ——Student science and technology innovation competition scholarship, **The third prize**, 2019

■ Social Activities

- The 2019 GUANGZHOU International Marathon, Volunteer, 2019
- The 2022 CHINA AUTOMATION CONGRESS, Volunteer, 2022

■ Referees

I am grateful and proud to be recommended by the following people:

1.

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