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
- GPA: <u>3.43 / 4.0</u> (Top Rank <u>30%</u> of <u>253</u> students, *Merit Graduate Student Awards*)
- Selected Courses: Data Structure(88), Basic Theory of Information(88), Electromagnetic Fields and Waves(91), Signal and System, Digital Signal Processing, Digital Image Processing

Postgrad Courses study, *University of Chinese Academy of Sciences*, China

Sep 2021 - Jul 2022

- Major: Social Computing (AI + Network Science)
- GPA: <u>3.57 / 4.0</u> (One-year courses, all about AI and Applied Maths)
- Selected Courses: Multivariate Statistical Analysis(93), Funtional Analysis(95), Machine Learning, Deep Learning,
 Pattern Recognition

Project(new to old)

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 adout 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

 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)

Dec 2020 – Jul 2021

- 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 2018

- 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, such as *AdaIN* (Huang et al, 2017), and compare their performance in MS-COCO dataset, also required to do the data pre-processing.

Research Publications

No publication at present.

Coding Skills

- Python, (Proficient in using Pytorch, Spider and so on.)
- C++, (Proficient)
- Matlab, (Proficient)

Adwards

- The Chinese Mathematics Competitions, *The third prize*, 2017, *The second prize*, 2018
- Contemporary Undergraduate Mathematical Contest in Modeling, *The third prize*, 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:

Update in Sep 8th, 2022

1.

Jinglun Shi, Ph.D,

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2.

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3.

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