SIJIA LI

University of Science and Technology of China ◇ Hefei, 230022, P.R.China
lsj13125@mail.ustc.edu.cn ◇ sijia-li ◇ sijia-li.github.io

EDUCATION

University of Science and Technology of China Hefei, P.R.China
***Master** of Information and Communication Engineering* *Sept, 2021 – Jul, 2024*

- **Core courses**: Networking Technologies in Cloud Computing (90), Fundamentals of Data Networks Theory (87), Multimedia Communication (89), Principal of Information Network Protocols(85)

University of Science and Technology of China Hefei, P.R.China
***Bachelor** of Electronic Information Engineering* *Sept, 2016 – Jul, 2020*

- **Core courses**: Mobile Communications Principles and Practice (89), Signals and Systems (83), Communication Network and Switching (80), Computer Network (80)

HONORS & AWARDS

- **2023 National Scholarship**
- **2023 First-Class Academic Scholarship**
- **2021, 2022 Second-Class Academic Scholarship**
- **2018 Outstanding Volunteer**
- **2017 Outstanding Member of Student Union**

PUBLICATIONS

1 **Sijia Li**, Baojia Li, and Zuqing Zhu, "To Cooperate or Not to Cooperate: Service Function Chaining in Multi-Domain Edge-Cloud Elastic Optical Networks," Optical Fiber Communications Conference, San Diego, CA, USA, Mar. 2022.

2 **Sijia Li**, Baojia Li, and Zuqing Zhu, "On the Game-Theoretic Analysis of Dynamic VNF Service Chaining in Edge-Cloud EONs," in Journal of Lightwave Technology, vol. 41, no. 10, pp. 2940-2952, May. 2023.

3 Ruoxing Li, **Sijia Li**, and Zuqing Zhu, "Service Provisioning in Wavelength-Switched Optical Networks based on P2MP Transceivers," Asia Communications and Photonics Conference, Wuhan, China, Nov. 2023.

4 Ruoxing Li, **Sijia Li**, Meihan Wu, Yuxiao Zhang, Qian Lv, and Zuqing Zhu, "Dynamic Asymmetric SC Allocation and Reconfiguration in Drop-and-Continue Optical Networks based on P2MP-TRXs," Optical Fiber Communications Conference, San Diego, CA, USA, Mar. 2024.

RESEARCH INTEREST

Fields Cloud Computing, Networked Systems, Operating Systems, Memory Systems

Methods Game Theory, Linear Programming, Graph Theory, Heuristics

RESEARCH EXPERIENCE

***INFINITE Lab*, USTC** Hefei, P.R.China

Research Assistant / Advisor: Prof. Zuqing Zhu *Apr, 2021 – present*

Project: Service function chaining in multi-domain EC-EONs

- Proposed static non-cooperative provisioning algorithm of virtual network function (VNF) service chaining in edge-cloud elastic optical networks (EC-EONs), achieved independent and fair orchestration of IT and spectrum resources[1]
- Designed dynamic non-cooperative provisioning algorithm that considered VNF heterogeneity and interactions between domain managers. Designed cooperative service provisioning algorithm that enhanced overall benefits. Analyzed trade-off between domain autonomy and blocking performance[2]
- Proposed a self-organizing coalition formation algorithm across multi-domain EC-EONs to improve resources efficiency and reduce blocking rate, analyzed coalition stability, applied a fair revenue sharing mechanism to facilitate cooperation among domain managers

Project: Distributed task scheduling in AOI-based datacenter

- Identified technical methodologies to improve the flexibility of distributed task scheduling in reconfigurable all-optical interconnect (AOI) based datacenter networks
- Utilized mixed-integer linear programming to optimize Coflow scheduling combined with the reconfigurations of topology to minimize Coflow completion time

Project: Time-efficient service recovery for large-scale optical networks

- Designed low-complexity heuristics for link evaluation and topology pruning in large-scale optical networks (3000 nodes and 60000 ports) based on traffic distribution and redundant spectrum
- Utilized deep reinforcement learning (DRL) to enhance the scalability of service recovery with the aid of network segmentation, employing DRL agents to coordinate routing and spectrum allocation across sub-networks in a distributed manner

***Neuroimaging Lab*, USTC** Hefei, P.R.China

Research Assistant / Advisor: Dr. Xiaoxiao Wang *Jul, 2020 – Mar, 2021*

Project: Functional magnetic resonance study of human sensory systems

- Studied taste representation in human brain using functional magnetic resonance imaging (fMRI). Built an fMRI-compatible tastant-delivery system using programmable microcontroller and Python, improving the precision in mapping taste-related brain regions
- Performed fMRI brain scanning, prepocessed and analyzed fMRI data using Matlab and Python

PROGRAMMING SKILLS

Proficient Python, Matlab, LaTeX, Markdown

Familiar C, Linux, TensorFlow, Keras, OpenCV, SQL, Git

LANGUAGE SKILLS

TOEFL iBT 106/120 (Reading 29, Listening 28, Speaking 24, Writing 25)