YEXIAO HE

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EDUCATION

University of Electronic Science and Technology of China(UESTC) **Sept. 2016 – June 2020**
Bachelor *Overall GPA:3.71/4.00*
Yingcai Honors College
School of Information and Communication Engineering

University of Electronic Science and Technology of China(UESTC) **Sept. 2020 – Present**
Candidate for Master *Overall GPA:3.73/4.00*
School of Information and Communication Engineering

EXPERIENCE

Optimization of SFC steering in NFV-enabled networks **September 2019 - March 2020**

- Investigated on the problem of SFC steering in NFV-enabled networks and proposed a rounding based algorithm to achieve the load balance.
- Proved the effectiveness of the proposed algorithm theoretically.
- Conducted extensive experiments to show the performance of the proposed algorithm.
- Wrote a paper about this and the paper was published on Computer Networks

A survey on quantum networks **June 2019 - December 2019**

- Worked in a team of three people and read many papers about quantum networks.

Research on reliability design of NFV **June 2020 - July 2021**

- Searched literature and proposed a method to against infrastructure failure.

Research on the resource allocation of distributed machine learning **September 2020 - Present**

- Investigated on the straggler problem of distributed machine learning and proposed two different methods to accelerate the training process.
- Investigated on the incentive mechanism design of federated learning and proposed a mechanism based on game theory to maximize social welfare. The proposed mechanism also achieves incentive compatibility, individual rationality and weak budget balance.
- Proved the effectiveness of the proposed incentive mechanism theoretically.
- Wrote a paper about the proposed mechanism.

Research on SD-WAN node location selection and routing algorithm **April 2022 - May 2022**

- Proposed an algorithm to select SD-WAN node location to reduce the overall cost. (HUAWEI Spark Award)

PUBLICATION

- Y. He, X. Zhang, Z. Xia, Y. Liu, K. Sood and S. Yu, "Joint optimization of service chain graph design and mapping in NFV-enabled networks" *Computer Networks*, vol. 202, 2022.
- Y. He, X. Zhang, Y. Zhao and Y. Zhang, "An incentive mechanism for cross-silo federated learning to maximize social welfare" (under review).
- Z. Zeng, Z.Xia, X. Zhang and Y. He, "SFC design and VNF placement based on traffic volume scaling and VNF dependency in 5G networks" (accepted by Computer Modeling in Engineering & Sciences).
- Y. Liu, X. Zhang, Y. Zhao, Y. He, S. Yu, and K. Zhu, "Chronos: Accelerating federated learning with resource aware training volume tuning at network edges" (in revision, IEEE Transactions on Vehicular Technology).

RESEARCH INTERESTS

- **Federated Learning**
- **Incentive Mechanism Design**
- **Networks**

AWARDS

- Award for advanced individual, UESTC, 2019
- The first prize postgraduate scholarship, UESTC, 2020
- The Third prize postgraduate scholarship, UESTC, 2021

ENGLISH PROFICIENCY

- CET 6: 574
- CET 4: 642

EXTRACURRICULAR ACTIVITIES

- Attended an aid education program and volunteered to teach children in a rural area.
- Played for my college and won the runner-up in the basketball game of UESTC.
- Played bass at the art show of UESTC.