

# ZEMING ZHUANG

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No.1, Zhongke Road, Pudong District, Shanghai 201210, China

## EDUCATION

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**Shanghaitech University** Sept. 2021 - Expected July 2024

M.S. in Information and Communication Engineering Overall GPA: 3.82 out of 4.0  
Convex Optimization(A), Mechatronics(A), Wireless Communication(A-), Machine Learning(A-)

**Shanghaitech University** Sept. 2017 - July 2021

B.Eng. in Electronic Information Engineering and Minor in Finance  
Signals and Systems(A), Operating Systems I(A-), Introduction to Control(A-)  
Investment and Financial Market(A+), International Finance(A), Principles of Accounting(A)

## RESEARCH EXPERIENCE

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**iData Lab** March 2022 - Expected July 2024

*Instructor: Prof. Yuanming Shi and co-advised by Prof. Dingzhu Wen*

- I joined iData Lab in 2022 and at present I am focusing on the research of Optimization and Machine Learning methods for resource allocation and transceiver design in new wireless communication networks such as Integrated Sensing and Communication and Edge Computing.

**Shanghai Institute of Fog Computing Technology (SHIFT)** Sept. 2019 - March 2022

*Instructor: Prof. Yang Yang, IEEE Fellow*

- I joined SHIFT since my third year of college in 2020, where I started learning about fog computing and edge learning. Reading publications and working with lab mates let me have a solid grasp on knowledge of Fog Computing and MEC.

## PUBLICATIONS

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### **Task-oriented Integration of Sensing and Over-the-air Computation for Edge-device Collaborative Inference**

We proposed a task-oriented ISCC system for edge co-inference combining target sensing, local feature extraction with feature aggregation and proposed a novel criterion minimum discriminant gain to directly measure the accuracy of inference tasks. The paper has been published by IEEE Transaction on Wireless Communication.

### **Decentralized Over-the-Air Computation for Edge AI Inference with Integrated Sensing and Communication**

Based on the research above, we considered the scenario when the server is unreliable for communication. We proposed an ISCC scheme for decentralized collaborative inference systems, where multiple devices connect to each other and share data via D2D links and full-duplex AirComp without a central server. The paper has been accepted and presented at GLOBECOM 2023.

### **Markov State Transition Modeling in Complex High-Dimensional State Space Based on Fuzzy Integral**

To analyze and predict system anomalies in complex systems, we proposed a novel grey-box modeling method for observing and describing the state of financial IT system based on fuzzy integral. Our proposed method showed an out-performance on a real business dataset of securities companies in China. The paper has been accepted by GLOBECOM Workshop 2022.

## PROJECT AND VOLUNTEER

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**A surveillance APP for epidemic**

Feb. 2020

- At the beginning of COVID-19 outbreak, my friends and I made an APP to collect and report resident's daily activity and physical conditions. Our APP has come into service for communities in Zhejiang and Sichuan during Feb. and March 2020.

**Shanghai International Marathon in 2018 & 2022**

Nov. 2018 & 2022

- I am always keen on joining social activities and helping others. I have been a volunteer for Shanghai Marathon Race and my duty was to guide runners after the finish line to supplement area and response to other potential need.

**TEACHING ASSISTANT EXPERIENCE**

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**Convex Optimization**

Fall 2023

**Introduction to Information Science and Technology**

Fall 2021

**HONORS**

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**ShanghaiTech Merit Student (Top 10%)**

Nov. 2023

**TECHNICAL STRENGTH**

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**Languages**

Chinese (Native), English (IELTS 7.5), Japanese (Conversational)

**Programming Languages**

Python, C/C++, MATLAB

**Tools**

Git, L<sup>A</sup>T<sub>E</sub>X, PyTorch, Pandas, CVX