Ziyang Song

Master's student in Electrical Engineering / Computer Science

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Profiles

ziyang.song
Linkedin

Skills

Programming Languages

C/C++, Python, Matlab

Formatting Languages

HTML, Markdown, LaTeX

OS, Workflow & Softwares

Linux, Git, Adobe PS, Microsoft 365

Micro-controller & Hardwares

Raspberry Pi, TI MSP430, Multisim, AutoCAD

Certifications

Huawei Sweden Hackathon
Dec. 2022

Final List

Computer System Development Capability Competition
Jun. 2022

National Third Prize

MCM/ICM COMAP
Feb. 2022

Successful Participants

Software and Information Technology Competition
Apr. 2021

National Merit Prize, Provincial First Prize

Summary

I have a solid foundation in networked systems, and communication engineering with both hardware and software experiences. I am interested in privacy preservation, cryptography, intelligent algorithms and networked security topics.

Driven by a fervent passion for continuous learning and practical application, I am ready to work with challenges and learn more to address problems, either in a team or individually.

Education

KTH Royal Institute of Technology — **Aug. 2022 - Present**
M.Sc. Information and Network Engineering
Stockholm, Sweden
GPA 4.667/5.0
https://www.kth.se

Track: Networked Systems

Thesis Project: A Privacy-Federated Learning Framework for Simulating User Interactions

Technical Courses: Internetworking, Signal Theory, Networked System Security, Digital Communication, Queuing Theory & Teletraffic Systems, Wireless Networks, SDN and NFV

EPFL — **Aug. 2023 - Feb. 2024**
Lausanne, Switzerland — Exchange Student
https://www.epfl.ch

Technical Courses: Machine Learning, Distributed Computing, Concurrent Algorithms

Harbin Institute of Technology, Shenzhen — **Aug. 2019 - Jun. 2023**
B.Eng. Electronic and Information Engineering
Shenzhen, China
GPA 88.5/100
https://www.hitsz.edu.cn

Technical Courses: Image Processing, Information Theory, Mobile Communication, Digital Signal Processing, Image Processing, Biomedical Electronics, Electromagnetic Theory, Complex Variable Functions, Differential Equations, Convex Optimizations, etc.

Base Courses: Calculus, Linear Algebra & Geometry, Probabilities & Statistics, Signals & Systems, Computers Theory, Electronic Circuits, Physics, Simulations

Projects

Simple Network Emulator — **Jun. 2023 - Jan. 2024**
Semester Project

• Emulator in Linux.

Programmed in C++, it provides a plug-and-play testing environment and allows experimenters to configure multiple distributed processes with different pseudo IP address and port and arbitrary delay matrix and connectivity. It inherited from the UDP structure and is added TCP support.
More >>

Awards

Scholarship for Abroad Students
2022

Scholarship for Undergraduates
2021

Scholarship for New-admitted Undergraduates
2019

Languages

Chinese (Cantonese, Mandarin)
Native Speaker

English
Fluent, C1/C2

Japanese
Intermediate, N3

Swedish, French
Beginner, A1/A2

Interests

Swimming
Former Athlete with National II Certificate

Photography
Seize the moments of travel, Capture the beauties of life

Blog
To read, to learn, To write, to think

Projects

Building Networked System Security **Jan. 2023 - Mar. 2023**
Course Project

• Demo networked system setup for a company.

It is a team-of-3 project implementing security methods (certificates, encryptions, VPNs, etc.) to a functional server (web services and file transfers). I use OpenSSL programming to generate root and intermediate CA, maintain and manage database, and issue certificates with authentication and revocation test. More >>

Electronics Process Summer Internship **Jun. 2021 - Jul. 2021**
Training

• Audio player with multiple functions.

It is by MSP430 series mini-controller programming in C, using infrared & ultrasound sensors for simple gesture detections of pause / play / next, with an 8*8 LED array to display figures matching the rhythm of music, assembling with laser-cutting outer package made in CAD. More >>

Quad-rotor Drone Simulation **Oct. 2021 - Mar. 2022**
Club Project

• Basic simulation of drone with sensors, inspired by Brian Douglas.

Raspberry PI micro-controller-based programming in Micro Python, using PID control in velocity loop for rotor control, using Simulink to calibrate the transfer function, using wireless communication port to connect & expanding the control system into the algorithm of auto cruising, obstacles avoiding & route planning, and ensuring stability. More >>

WeChat Mini-program for Maker-space **Nov. 2020 - May 2021**
Club Project

• Online mobile-adapted WeChat Mini-program, published in App store.

This project is for club information's release & promotion. Main functions are real-time news & message synchronization with HITsz official website, club's media articles updating, and club member info-integration. Elegant UI front-end design based on HTML / CSS, reference to open resource, friendly interaction & smooth vision. More >>

Experience

Class Assistant **Sep. 2019 – Jun. 2022**
Publicity Committee

Organizing in-class activities, making posters, editing news, taking photos and running class social media.

Microsoft Students' Club **Oct. 2019 – Aug. 2021**
Member, Club Director

Managing lecturing activities, creativity contests and students science festivals, running annual projects.

ACM Contest Team **Oct. 2020 – Feb. 2022**
Member

Training coding skills in C++ in a team of 3 to get nominated participating algorithm contests, ACM/ICPC, CCPC etc.