



Ziyang Song

Master's Graduate in Electrical Engineering / Computer Science

ziyang.song

📍 Stockholm, Sweden 📞 +46 761533535 @ ziyang_song@outlook.com 🔗 <https://chiron19.github.io>

Summary

I have a solid foundation in networked systems, algorithms and communication engineering with both hardware and software experiences. I am interested in privacy preservation, heuristic algorithms and networked security topics, especially post-quantum cryptography mechanisms with intelligent applications. I am an easygoing person who is nice to work with.

Education

KTH Royal Institute of Technology

Stockholm, Sweden

GPA 4.6/5.0

🔗 <https://www.kth.se>

Track: Networked Systems

Degree Project: Privacy-preserving Machine Learning with Homomorphic Encryption among Multi-parties (CKKS, Python & C++)
Awarded with Scholarship in 2025 [Full Version Thesis>>](#)

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

EPFL

Lausanne, Switzerland

🔗 <https://www.epfl.ch>

Technical Courses: Machine Learning, Distributed Computing, Concurrent Algorithms, Intelligent Agents

Semester Project: Simple Network Emulator [Github>>](#)

Harbin Institute of Technology, Shenzhen

Shenzhen, China

GPA 88.5/100

🔗 <https://www.hitsz.edu.cn>

Technical Courses: 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, Computer Theory, Electronic Circuits, Physics, Simulations

Guangdong Experimental High School

Guangzhou, China

CEE 632/750, Science Track

🔗 <http://gdsyzx.edu.cn>

Publications

Privacy-Preserving Convolutional Neural Networks Using Homomorphic Encryption: An Implementation of ResNet-20 on CIFAR-10

NTMS 2025 Accepted

🔗 [View >>](#)

Awards

ISSLS2000 for Degree Project

2025

Granted for writing an insightful degree project of high level, with results expected in contributing to the development in the field of networks and communications

General Student Scholarship

2024

Granted for good academic performance in 1st year master studies

SEMP Student Grant

2023

Granted for subsidy in exchange study in Switzerland (2nd year master autumn semester)

Scholarship for Abroad Students

2022

Granted for subsidy student studying abroad with excellent academic performance (1st year master)

Scholarship for Undergraduates

2021

Granted for great academic performance and extra-curricular competition awards (2nd year bachelor)

Scholarship for New-admitted Undergraduates

2019

Granted for admitted student with excellent CEE scores (1st year bachelor)

Projects

Simple Network Emulator

Jun. 2023 - Jan. 2024

Semester Project

- Emulator in Linux.

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

Software-Defined Networking & Network Function Virtualization

Apr. 2024 - Jun. 2024

Course Project

- Use POX and Click to implement basic functions

Project in Python implementing a network topology with public, demilitarized, and private zones. SDN part with controller, firewalls; NFV part with IDS, load balancer, and NAPT. [More >>](#)

Earlier 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

Integrated 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 >>](#)

Student Activities

THS Student Union

Aug. 2022 - Jan. 2025

Electrosektion, Simförening Member

Participate career fairs, regular semester routine or training, joint activities and competitions.

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.

Certifications Huawei Sweden Hackathon Final List	Dec. 2022
Computer System Development Capability Competition National Third Prize	Jun. 2022
MCM/ICM COMAP Successful Participants	Feb. 2022
Software and Information Technology Competition National Merit Prize, Provincial First Prize	Apr. 2021

References

Aws Jaber
Postdoctoral Researcher
<https://www.kth.se/profile/awsj>
Email: awsj@kth.se
Affiliation: KTH Royal Institute of Technology, Division of Network and Systems Engineering (NSE)
Description: Master's Degree Project's supervisor

Panagiotis Papadimitratos
Professor
<https://www.kth.se/profile/papadim>
Email: papadim@kth.se
Affiliation: KTH Royal Institute of Technology, Division of Software and Computer Systems (SCS)
Description: Course Lecturer (NSS, BNSS)

Gauthier Voron
Postdoctoral Researcher
<https://people.epfl.ch/gauthier.voron>
Email: gauthier.voron@epfl.ch
Affiliation: EPFL, IC IINFCOM Distributed Computing Laboratory (DCL)
Description: Semester Project's supervisor

Skills

Programming Languages



C/C++, Python, Matlab

Formatting Languages



HTML, Markdown, LaTeX

OS, Workflow & Softwares



Linux, Git, Adobe PS, VScode

Micro-controller & Hardwares



Raspberry Pi, TI MSP430, Multisim, AutoCAD

Languages

Chinese (Cantonese, Mandarin)

Native Speaker

English

Fluent, C1/C2

Japanese

Intermediate, N3

Swedish

Intermediate Beginner, B1/B2 (SFI 3D)

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