

# PAWAT SONGKHOPANIT

sunnypawat@gmail.com • +46720094387 • Stockholm (Sweden) • linkedin.com/in/pawatsong • <https://github.com/sunnypawat>

## SUMMARY & RESEARCH FOCUS

Highly motivated and intellectually curious Master’s student with a strong foundation in software, AI, networking, and cloud computing, seeking a challenging Master’s thesis opportunity. Proven ability to conduct independent research, develop innovative solutions, and contribute to cutting-edge technology. Eager to use expertise in network architecture optimization, communication systems, and cloud-native development to make an impact and contribute to strategic objectives.

## WORK EXPERIENCE

**Chulalongkorn University**  
**Teaching Assistant**

Jan 2024 - May 2024  
Bangkok, TH

- Assisted in teaching and guiding students in Computer Programming and Principles of Telecommunication, fostering foundational knowledge crucial for network and cloud engineering.
- Facilitated learning for an average of 25 students per semester, leading to 100% improvement in average student project scores across relevant topics

**LINE MAN Wongnai**  
**Software Engineering in Test**

May 2023 - Aug 2023  
Bangkok, TH

- Executed manual, automated, and regression testing in an agile product development environment, ensuring high-quality software releases.
- Improved testing efficiency by automating 15 test cases for critical cloud-native applications using Python, Cypress, and Selenium, directly supporting robust CI/CD pipelines.
- Identified and resolved 22 critical bugs, contributing to more than half the reduction in post-deployment issues and enhancing product reliability.
- Utilized Docker and Kubernetes for containerized test environments, promoting scalable and reproducible testing of distributed systems.

## ACADEMIC PROJECTS

**Cognitive Radio Communication System**

Fall 2024

- Implemented a GNU Radio-based cognitive transmitter and receiver system with reinforcement learning capable of sensing available channels and dynamically switching for reliable NBFM or WiFi-like transmissions.
- Explored dynamic spectrum allocation methods, relevant for optimizing wireless resource utilization in edge computing and IoT integration scenarios, and achieved a 90% improvement in spectrum utilization efficiency compared to traditional fixed-spectrum methods

**Dynamic SDN Network Slicing for ComNetEMUs**

Spring 2024

- Developed a ComNetsEmu and Ryu-based platform for on-demand, secure Software-Defined Networking (SDN) network slices.
- Designed and implemented adaptive isolation and policy enforcement for diverse security scenarios, directly addressing network security & performance challenges.
- Designed and implemented network slices capable of isolating 3 distinct user groups, improving and reducing latency by 80% for critical applications.

## Fuzzy-KNN Weighted Centroid Localization

Spring 2024

- Led the implementation and performance evaluation of this novel, geometry-aware range-free localization algorithm for wireless sensor networks (WSN) and IoT environments.
- Built the simulation environment (in Python/Jupyter) to contrast Centroid, WCL and FKWCL methods; incorporated K-Nearest-Neighbour anchor selection (with angular diversity) and fuzzy weighting (combining distance and angle metrics)
- Achieved up to 75% reduction in mean localization error in challenging anchor layouts and non-ideal environments compared to the baseline Centroid approach, while maintaining microsecond-level runtime overhead.

## EDUCATION

---

### MSc, EIT Digital - Cloud and Network Infrastructure

Aug 2024 - Aug 2026

#### KTH Royal Institute of Technology and University of Trento

Stockholm, SE; Trento, IT

- Relevant coursework: Next Generation Network, Computer Laboratory for Social Impact, Cloud Computing

### BSc, Information and Communication Engineering

Aug 2020 - May 2024

#### Chulalongkorn University (First Class Honour)

Bangkok, TH

- Relevant coursework: Teletraffic Engineering and Network Optimization, Principle of Wireless Communication, Big Data and Artificial Intelligence

## TECHNICAL SKILLS

---

- **Cloud & DevOps:** AWS, Azure, GCP (Familiarity), Docker, Kubernetes, Terraform (Familiarity), CloudFormation (Familiarity), Jenkins, Git/Github, Linux, CI/CD
- **Networking:** TCP/IP, Routing, Switching, Firewalls, VPNs, SDN/NFV, RYU-SDN, Wireless Communication, Network Architecture, Network Security, Network Optimization
- **Programming:** Python, MATLAB, TypeScript, Java, JavaScript, C, C++, Go (Familiarity)
- **Frameworks & Libraries:** ReactJS, Vue.js, Angular, Flask, Arduino, GNURadio, TensorFlow, PyTorch, Scikit-learn, Pandas, Numpy
- **Databases & APIs:** MySQL, MongoDB, JSON, HTTP, REST, MQTT, APIs, Postman
- **Tools & Methodologies:** Cypress, Selenium, Agile, Problem-solving, Research Methodologies, Data Analysis

## SOFT SKILLS

---

- Team Leadership, Cross-cultural collaboration, Communication & Interpersonal, Community Engagement, Analytical & Critical Thinking, Independent Research, Problem Solving

## LANGUAGES

---

- Thai (Native), English (C2)