

Theerut (Tee) Amornkasemwong

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EDUCATION

Northwestern University, Evanston, IL

Anticipated Jun 2023

Bachelor of Science in **Electrical Engineering and Computer Science**

Cumulative GPA: **3.97/4.00** | Dean's List: 12 of 12 quarters

Academic Honors: Eta Kappa Nu, Tau Beta Pi, Outstanding Peer Mentor Award

Relevant Courses: Scalable Software Architecture, Data Structures and Algorithms, Computer Vision, Machine Learning, Communication Networks, Concurrent Programming, Digital Control and Feedback Systems

EXPERIENCE

Teaching Assistant | Computer Science Department, Northwestern University

Jan 2020 – Dec 2022

- Taught (1) Computer Systems, (2) Data Structures and Data Management classes, and (3) Microprocessor System Design
- Redesigned difficult lectures to make course material easier for students to understand
- Led tutorial sessions with up to 50 students and facilitated office hours to support individual students

Software Engineer Intern | Meta, Menlo Park, California

Jun 2022 – Sep 2022

- Developed a routing policy simulator to help engineers design and validate BGP routing policy
- Added support for advanced scenarios (e.g. drained routers, failed links, etc.) to better reflect Meta's production system
- Optimized and automated the simulator's fetching and parsing of config files; this decreased its processing time by a factor of 4
- Ported the policy manager running on production routers to the simulator via Cython
- Implemented BGP route injection, which—along with the improvements above—increased the simulator's policy coverage from less than half to over 90%

Software Engineer Intern | Belvedere Trading, Chicago, Illinois

Jan 2022 – Mar 2022

- Enhanced a visualization tool used for viewing internal metrics associated with derivatives
- Developed an algorithm that efficiently fetches, and processes live market data
- Designed and implemented new gRPC contracts and APIs between two internal C++ services
- Deprecated and removed unused features and dead code from an internal web service in C++
- Wrote integration and regression tests to automate testing around an existing service in Python

Business Development Partner Intern | Agoda, Bangkok, Thailand

Jun 2021 – Aug 2021

- Developed a Python script to automate and ensure fairest partitioning of A/B testing groups
- Constructed a machine learning-based product recommender for sales team using hotel and its competitors' booking statistics to determine optimal product to sell to that hotel; increased conversion rate by ~10% after first two weeks
- Identified pain points and restructured sales strategy to streamline Agoda's product selection

Data Scientist Intern | Kasikorn Business Technology Group, Bangkok, Thailand

Jun 2020 – Aug 2020

- Analyzed the impact of changes in stock fundamentals on their quarterly returns
- Prototyped machine learning models on Jupyter Notebook to maximize returns from SET100 index
- Achieved an annual average return of 30 percent (back tested from year 2017 to 2019)

PROJECTS AND ACTIVITIES

Electronic Engineer | Wireless Webcam, Northwestern University

2023

- Constructed a double-sided PCB to hold a SAM4S8B microcontroller, ESP-32 Wi-Fi module, and an OV2640 camera module
- Developed firmware to configure and control each module over I2C, UART, and SPI
- Designed and built a 3D enclosure to house the electronic system

Lead Programmer | Smart Sentry "Dum-E" Project, Northwestern University

2022

- Built a sentry system capable of tracking targets using an ESP32-CAM and a pan-tilt frame
- Developed a Python server using the Tornado framework and employed asynchronous code to control the sentry while allowing multiple concurrent connections between the sentry, the cameras, and a web interface
- Incorporated computer vision and image processing techniques to reduce server latency and optimize sentry's tracking capability

Lead Programmer | RoboBrawl Robotics Competition, Northwestern University

2019 – 2020

- Developed a C-program for a combat robot on the ESP32
- Adapted conventional differential drive algorithms, optimizing robot's driving experience

Programmer | IEEE Project, Northwestern University

2019 – 2020

- Implemented an MQTT publisher-subscriber communication protocol between ESP32 nodes
- Constructed population density maps around campus by employing triangulation techniques using strength and quantity of mobile device connections

Lead Engineer | Seeing Sound, Bangkok, Thailand

2016 – 2018

- Engineered a cost effective, electronic system to help visually impaired patients navigate their homes
- Developed mini-circuit boards for the Arduino microcontroller and passive infrared sensors