

# Tarit Witworrasakul

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## EDUCATION

### University of British Columbia

*Bachelor of Science in Computer Science (Outstanding International Student Award)*

September 2023 – May 2027

*Vancouver, BC*

## WORK EXPERIENCE

### Software Developer Intern

*Applicad Public Company Limited*

June 2024 – August 2024

*Bangkok, Thailand*

- Conducted an analysis of the sales team's needs for a customer identification solution, defining essential functionalities and designing user flows in collaboration with a UX/UI designer to develop a Figma prototype
- Developed a real-time facial recognition web application using Next.js, featuring a user interface for customer identification with 95% accuracy via webcam, along with an admin page for managing customer data
- Built a backend service in Python with FastAPI for face vector comparison using ChromaDB, integrated with a PostgreSQL database for storing User Data, and linked it to the existing internal customer database
- Implemented a robust authentication system featuring role-based access control with NextAuth, utilizing JWT sessions and email OTP for secure login, and employed Next.js middleware for token verification
- Deployed the application and databases to an on-premises Ubuntu server using Docker and Docker Compose

## TECHNICAL EXTRACURRICULARS

### UBC Uncrewed Aircraft Systems Design Team - Software Developer

September 2023 – Present

- Contributed to the development of autonomous drones competing in the the Aerial Evolution Association of Canada 2024 competition, achieving 2nd place in the proposals phase and 3rd place in the demonstration phase
- Successfully migrated 15+ endpoints in MissionPlanner-Scripts, a REST APIs and WebSocket interface between a backend system and ArduPilot, to a cross-platform architecture using Pymavlink and Flask, eliminating reliance on Windows-only MissionPlanner client scripts
- Crafted OpenAPI Specifications and Postman collections to facilitate team collaboration and API integration
- Developed a pipeline for drone target detection using a fine-tuned YOLOv8 model with tiled inference
- Created dataset generator program using OpenCV and imgaug, eliminating the need for manual data labeling

## PROJECTS

### WasteWizard (nwHacks 2024 Honorable Mention Award) | *Node.js, HTML, CSS*

January 2024

- Created a full-stack web application for waste tracking and management in hospitals
- Developed REST APIs using Express.js and MongoDB with Mongoose ORM to manage bin cleaning logs and provide data for admin dashboards; utilized Auth0 to ensure robust authentication and authorization
- Deployed the application on Azure VM, enabling public access with secure HTTPS through Caddy web server

### Ring Notify | *Typescript, Golang, React Native, Firebase, PostgreSQL, Azure*

October 2023 – Present

- Developed a mobile application for urgent alert notifications via call screen functionality using React Native
- Built REST APIs for user registration and IoT-triggered notifications, leveraging Golang with Echo and Firebase Cloud Messaging for sending out alerts to mobile devices, and managed user data in PostgreSQL
- Automated deployment to Azure VM using Docker and GitHub Actions with HAProxy as a reverse proxy

### TH-EN Machine Translation | *Python, Huggingface, Gradio, PyThaiNLP*

April 2023 – July 2023

- Developed a data processing pipeline to clean and normalize Thai text, including vowels, signs, and Unicode characters, for SCB-1M and OPUS finetuning datasets
- Performed comparative finetuning of mT5 and NLLB-600M models with full-finetuning and LoRA techniques
- Boosted translation accuracy by 42% over the pretrained model, achieving a 27.37 BLEU score on the IWSLT 2015 test set through full finetuning of the NLLB-600M model

## TECHNICAL SKILLS

**Languages:** Python, Typescript, Dart, C, C++, Java, Golang, R, HTML

**Libraries & Frameworks:** React, NextJS, OpenCV, Huggingface, Pandas, NumPy, FastAPI, Streamlit, Gradio, Flutter, Arduino, Echo, JUnit, Swing

**Developer Tools:** Git, GitHub, GitHub Actions, Linux, Docker, Docker Compose, Postman, VS Code, IntelliJ, Cloudflare, Firebase, Google Cloud Platform, Microsoft Azure, Supabase, Vercel, ChromaDB, PostgreSQL, HAProxy