

Tam Zher Min (Zac)

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Education

National University of Singapore

Aug 2019 – May 2023

Bachelor of Engineering in Electrical Engineering; Minor in Data Engineering

GPA: 4.49/5.00

- Dean's List – Top 5% of Cohort

Experience

Shopee – Algorithm Engineer

Aug 2022 – Dec 2022 [[GitHub](#)]

Under the Identity Verification team for the largest e-commerce platform in SEA to offer CV/ML solutions to Shopee systems globally

- Significantly trimmed down 99.8% of SDK size by replacing the heavy OpenCV dependency with custom C++ algorithms
- Employed geometric constraints on top of Canny edge detector and Hough Line Transform algorithm to detect identity cards
- Obtained a low average MSE below 10 pixels in a 462x291 guided window by implementing a moving average frame queue
- Concurrently developed the algorithm on Android to reduce blockers between the SW and DS teams for the SDK deployment

SSMC – Machine Learning Engineer

Aug 2021 – Dec 2021 [[GitHub](#)]

Semiconductor manufacturing joint venture between TSMC and NXP looking to optimize their wafer QA system and data servers

- Achieved 99.1% test accuracy and 80% precision to classify wafer defects by leveraging pretrained ResNets and MobileNets
- Explored online MLOps options for model deployment with an MVP Streamlit [webapp](#) before settling on the offline solution
- Architected a local “Automatic Wafer Defect Classification System” wrapping .h5 models in a portable Windows software
- Enabled upwards of >90% storage reductions, translating to tens of thousands in cost savings and incentivized digitalization

Projects

LeetCode | Next.js, Mantine, Tailwind, TypeScript, Prisma, MySQL, FastAPI

2022 – 2023 [[App](#) | [GitHub](#)]

- Lead a team of 4 to build an adaptive learning software under the Agile methodology using Notion and Kanban boards
- Crafted learning courses presented with Markdown and LaTeX that dynamically suggests questions of appropriate difficulty
- Estimated topic mastery using a Bayesian Knowledge Tracing hidden Markov model wrapped under a FastAPI microservice
- Productionized the Docker containerized and Redis cached model to Heroku serverless functions with exposed API endpoints
- Hosted the webapp on Vercel, the MySQL database on PlanetScale, accessed using Prisma, and Cloudinary for media storage
- Documented the schema design using Mermaid and UI/UX designed in Figma, realized through Mantine and Tailwind CSS

LaidLE – Database Technology & Management (Grade: A) | Django, Bootstrap, PostgreSQL

Apr 2021 [[GitHub](#)]

- Deployed a meal-crowdsourcing social enterprise CRUD webapp with a non-Django ORM raw-SQL backend to Heroku
- Session-based authentication with password hashed by pycrypto's bcrypt and access-restricted views using custom decorators
- Featured 4 user-groups with a custom admin panel alongside generated QR codes for unique coupon and reward allocation

COPEMON – MCU Programming & Interfacing (Grade: A) | C, Assembly, Tkinter

Nov 2020 [[GitHub](#)]

- Developed a MedTech IoT Windows software with live charting using sensor data drawn from the STM32 Cortex-M4 MCU
- Offered automatic SMS alerts to next of kins facilitated by the Twilio API whenever the patient falls into critical conditions

Extracurricular & Hackathons

NUS FinTech Society – Software & Machine Learning Engineering

2021 – 2023

- Designed the society HRMS and home website for better management using the T3-Stack (TS, tRPC, Tailwind) and Next.js
- Incorporated deep learning and Haar Cascade OpenCV models to aggregate attention metrics on 5 to 10 student online classes
- Delivered the React and Firebase real-time dashboard POC webapp to ripplecreate, a kids STEM tutoring company

DSTA – BrainHack (Machine Learning Hackathons)

Jun 2021

- **TIL:** Ranked 18/102 teams with PyTorch to perform object detection and sound classification on 5 to 10 different animals
- **SeeTrue:** Placed 7/53 individuals using InceptionV3 from TensorFlow and Keras to identify deepfake news in videos

NUS Hackers – Hack & Roll: Coded up QuizLah!, a JavaScript Alexa skill for a voice-interfaced trivia game

Jan 2021

Skills

Programming Languages: Python, TypeScript/JavaScript, SQL, C++, C, Assembly, Verilog

Software Engineering: Next.js, Postgres/MySQL, React, Express.js, Node.js, Django, FastAPI, Flask, AWS, UNIX, Git

Machine Learning / Data Science: TensorFlow, Keras, PyTorch, Scikit-Learn, OpenCV, NumPy, Pandas, Matplotlib, Plotly