Tam Zher Min (Zac)

+65 8128 7871 | tamzhermin@gmail.com | linkedin.com/in/tamzhermin | github.com/zhermin

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 AY21/22 SEM 2

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
• Researched on template matching algorithms, CNN regression models and ONXX and MNN model conversion pipeline
• 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

ripplecreate – Machine Learning Engineer **Feb 2022 – Apr 2022 [GitHub]**
Kids STEM tutoring company looking to extend microloan financing to select students with the help of student attention indexing
• Developed deep learning and Haar Cascade OpenCV models to aggregate attention metrics on 5 to 10 student online classes
• Uploaded real-time model data to a Firebase backend served through a React frontend with live dashboards for monitoring

Tivlon Technologies – Data Scientist & Engineer **May 2019 – Dec 2019 [GitHub]**
Commodity trading consultancy looking to consolidate pricing data for analysis and visualization to offer customer value-add
• Fed large amounts of raw Excel data containing commodities' daily historical prices and inventory through an ETL pipeline
• Employed industry-standard BI tools such as Power BI and Tableau to dashboard the connected and formatted data sources

Projects

LeetNode | 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

LaidLE – Database Technology & Management (Grade: A) | Django, Bootstrap, PostgreSQL **Apr 2021 [GitHub]**
• Deployed a meal crowdsourcing CRUD webapp with a non-ORM raw SQL backend and session-based authentication
• Featured 4 user-groups with a custom admin panel alongside generated QR codes for unique coupon and reward allocation

HDB Price Predictor – Learning from Data (Grade: A) | Streamlit, TensorFlow, Sklearn **Mar 2022 [App | GitHub]**
• Spun up a Streamlit webapp with traditional ML and ANNs trained using 5-year historical HDB prices from Data.gov.sg

Hackathons

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

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