

EDUCATION

National University of Singapore

Bachelor of Computing in Computer Science, Second Major in Mathematics

Aug. 2023 – May 2027 (Expected)

Current GPA: 4.55/5.0 (Ongoing)

TECHNICAL SKILLS

Languages: Python, C++/C, Java, Javascript/Typescript, SQL

Developer Tools: Git, Docker, AWS, Jira, Bitbucket, Jupyter

Frameworks: React, NextJS, TailwindCSS, OpenCV

Libraries: Pytorch, Tensorflow, Scikit-Learn, Pandas, YOLO

EXPERIENCES

Software Engineering Intern | Video Analytics

May 2024 – Aug 2024

Kabam Robotics

- Engineered and deployed object-based alert throttling algorithms for a fleet of security robots, enhancing real-time object detection.
- Executed extensive testing and benchmarking of cutting-edge computer vision models, including YOLOv10, to rigorously evaluate their suitability for production.
- Performed comprehensive data preparation, including cleaning, preprocessing, augmentation, and pipelining of image datasets, to facilitate custom model development and deployment.
- Authored detailed documentation and optimized codebases, reducing technical debt and ensuring scalable future development.
- Technologies used: Python, Docker, OpenCV, YOLO, ROS, AWS, Bitbucket, Jira

Member – Vice-President

August 2023 – Present

NUS/RC4 AI (Residential College 4 | National University of Singapore)

- Expanded expertise in machine learning and artificial intelligence through active membership in RC4AI, a student union group partnered with AISG to deliver quality AI education.
- Led initiatives and facilitated workshops, enhancing members' understanding and application of AI technologies.

PERSONAL PROJECTS

NotStonks | C++ | <https://github.com/yhanyi/NotStonks>

May 2024 - Present

- Developing a versatile and exploratory library of C++ header files, designed to perform a wide range of computations, from machine learning to quantitative trading simulations, utilising mutexes and guards for enhanced concurrency control.
- Engineered for lightweight, plug-and-play integration into C++ programs, enabling seamless processing of data stored in .csv files.
- Implemented a variety of features, including the ability to save and load pre-trained models with approximately 95% neural network accuracy, and a simulated internal broker API using historical stock data from YahooFinance.
- A personal, continuously evolving project, serving as a playground for learning and experimenting with C++, and writing interesting mathematical, machine learning, and trading functions.

MedExtension | Javascript, OpenAI | <https://github.com/yhanyi/MedExtension>

December 2023

- Developed a Chrome extension utilising OpenAI's GPT API to generate concise summaries for online medical documents.
- Created and submitted a complementary CRUD forum website using Typescript, NextJS, and MongoDB.
- Designed and implemented the project for Health Hack 2024 as the sole programmer on the team, learning to effectively communicate with non-programmers to develop features and products that met their needs.

ArknightsParticles | Typescript, ThreeJS, GLSL | <https://github.com/yhanyi/ArknightsParticles>

December 2023

- Developed a particle effect simulation using Typescript and ThreeJS by reverse-engineering elements from a game website.
- Refactored and optimized outdated GLSL shaders and ThreeJS code to leverage the latest functionalities for improved performance.
- Migrated the project from an outdated React framework to NextJS, ensuring a smoother deployment on Vercel.

Digits Predictor Webapp | Tensorflow, HTML, CSS, Javascript | <https://github.com/yhanyi/CNNDigits>

December 2023

- Trained a TensorFlow convolutional neural network, achieving 97% accuracy in predicting digits from handwritten images.
- Integrated TensorFlowJS to import and utilise the trained model in JSON format, enabling real-time predictions within the webapp.
- Designed and implemented an interactive canvas component to capture handwritten user input, converting it into data arrays for precise model predictions.
- Visualized model confidence using ChartJS, providing users with intuitive and immediate feedback on prediction accuracy.

Portfolio Website | Typescript, React, NextJS, ThreeJS | <https://github.com/yhanyi/Portfolio>

December 2023 – Present

- Acquired proficiency in web development tools including Typescript, Tailwind, NextJS, and ThreeJS to build a dynamic and feature-rich portfolio website.
- Self-taught React and NextJS frameworks, incorporating ThreeJS to integrate 3D elements and enhance user experience.