Wong Yen Hong

https://wyhong3103.live/ — https://github.com/wyhong3103/

Education

Multimedia University

• Bachelor of Computer Science; CGPA: 3.97/4.00 Foundation in Information Technology; CGPA: 3.94/4.00

EXPERIENCE

MoneyLion

- Data Science Intern
 - MoneyLion is a U.S.-based financial technology company offering digital banking, investment, and lending services designed to help users manage their personal finances.
 - Enhanced the performance of the transaction categorizer in long-tail (rare) categories.
 - Designed and implemented an on-demand rule injection pipeline that leverages clustering algorithms, large language models, and graph traversal techniques to auto-generate deterministic rules, facilitating the labeling of ground truths and improving model accuracy.
 - Generated 582 deterministic rules that curated approximately 14,000 ground truths in long-tail categories, increasing model's accuracy by 30% in categorizing these new ground truths.
 - Optimized the execution time of a Metaflow pipeline by 4x, reducing processing time from 8 minutes to 2 minutes by enhancing query efficiency and leveraging parallel processing.
 - Implemented a DAG workflow in Airflow to run a dbt script that refreshes a Snowflake table weekly, ensuring data freshness.

CodeNection 2023

Head of Competition Division

- CodeNection 2023 is one of the largest competitive programming events for university students in Malaysia.
- Led a team of 5 members to create over 20 algorithmic problems that covered topics such as Dynamic Programming, Number Theory, Graph Algorithms and Greedy Algorithms.
- Developed robust test cases using testlib.h for each problem shortlisted in the problem set.
- Composed problems and editorials using LaTeX on Overleaf.
- Conducted 2 workshops to prepare over 200 participants for the upcoming rounds.

Projects

- AesCrop
 - Ongoing research in automatic image cropping under the supervision of Assoc. Prof. Dr. Wong Lai Kuan at the ViPR Lab.
 - Designed and implemented a novel hybrid Mamba-based architecture with aesthetic guidance, integrating compositional principles to enhance automatic cropping performance.
 - Implemented a training strategy incorporating bipartite matching via the Hungarian Algorithm and quality-guided soft label approximation, based on techniques from published research.
 - Tech Stack: Vast.AI, OpenCV, PyTorch, Python

• MakanLah

- Local food education app featuring MLOps pipelines.
- Trained a food classification model using MobileNetV2 with Outlier Exposure, achieving 90% accuracy on in-distribution examples and 92% accuracy on differentiating out-of-distribution examples.
- Collected and curated a dataset of 30 food categories, with an average of 70 high-quality images per class.
- Developed a script to generate synthetic adversarial examples, improving model robustness.
- Built an end-to-end MLOps pipeline on Kubernetes (EKS), including a model registry (MLflow), distributed training cluster (Ray Train), serving infrastructure (Ray Serve), and workflow orchestrator (Metaflow).
- Implemented a feedback loop system to automatically trigger model retraining based on user input, ensuring continuous improvement.
- Designed and implemented the MakanLah App and MakanLah API.

Kuala Lumpur, Malaysia Jul. 2024 - Oct. 2024

Cyberjaya, Malaysia

Sep. 2023 - Dec. 2023

Cyberjaya, Malaysia

Jul. 2021 - Sep. 2022

Nov. 2022 - Present

• **Tech Stack**: PyTorch, OpenCV, Terraform, AWS EKS, Ray, Metaflow, AWS S3, AWS RDS, React.js, Node.js, Express.js, JavaScript, Python

• Sudoku Mobile

- Sudoku mobile app with sudoku image recognition and sudoku solver.
- Implemented an algorithm based on contours that extracts the sudoku puzzle using OpenCV.
- $\circ~$ Implemented a CNN based on the LeNet-5 architecture to recognize handwritten digits, achieving 99.82% accuracy on the MNIST dataset.
- $\circ~$ Containerized and deployed the sudoku recognition API using Docker and AWS ECS & ECR.
- $\circ~$ Implemented a CI/CD pipeline to enable fast-paced development for the API.
- Designed and implemented a backtracking sudoku solver algorithm.
- $\circ~$ Designed and implemented a user-friendly mobile app using React Native.
- **Tech Stack**: React Native, OpenCV, PyTorch, Flask, Pytest, GitHub Actions, AWS ECS & ECR, Docker, TypeScript, Python

• What If I Never Brick

- $\circ~$ Code forces optimal rating predictor with more than 400 upvotes on Code forces.
- $\circ~$ Implemented a greedy algorithm along with the ELO rating algorithms to compute the optimal rating.
- $\circ~$ Designed and implemented an interface to allow users to interact with the application.
- Tech Stack: React.js, Redux, JavaScript, HTML, CSS, Git

Honors & Awards

- Codeforces: Ranked top 6% of users on the world's largest competitive programming platform.
- **Programming League National 2025**: Invited as guest speaker to guide beginners in the world of competitive programming.
- Programming League National 2024: Secured 1st place among 70+ teams.
- Programming League National 2023: Earned 3rd place among 60+ teams.
- CodeNection 2023 & 2024: Set problems for the biggest national competitive programming competition (100+ participating teams).
- CodeNection 2022: Achieved 2nd place among 100+ teams.
- Monash Coding League 2024: Secured 1st place among 80+ teams.
- Monash Coding League 2023: Won 1st place among 70+ teams.
- ImagineHack 2024: Earned Best Innovation Award.
- Data Science Digital Race 2024: Won 1st place among 100+ teams.

TECHNICAL SKILLS

- Languages and frameworks: Python (PyTorch, TensorFlow, Ray, Metaflow, Pandas, FastAPI, OpenCV), JavaScript (TypeScript, React.js, Redux, Next.js, React Native, Express.js), HTML, CSS, MongoDB, PostgreSQL, Redis, C++, Java
- CI/CD, Cloud & Tools: AWS, Terraform, Kubernetes, Docker, GitHub, GitHub Actions