HAN-FONG HSU

Computing Software Major

Contact

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Education

- The University of Melbourne (2024~now) WAM: 78 (H2A, Upper Class 2 Honours)

Courses: Foundation of Algorithm, Calculus, Linear Algebra, Elements of data processing, Object oriented software development, Applied Computation in Bioengineering

Projects and Experience

- Training a diffusion model from scratch with PyTorch

Build an image diffusion model (UNet and VAE) on CIFAR64 dataset with unconditional and conditional diffusion

- Inference API for LM with FastAPI

Build an inference API for language model with support for streaming text responses

- Train a language model from scratch with PyTorch

Pretrain a decoder-only language model on text, and tune model for instruction following task

- Simple Ray tracer in Java using OOP

Build a ray tracer using linear algebra knowledge of projection, and OOP project design using Gradle

- Audio Spectrum analyser with Tauri
- Research Paper: Assessing the Effectiveness of LLM on Physical Therapy Questions

Research paper investigating on prompting technique that yields best result from a language model

- Next.js full-stack website (with TypeScript)

A project showcase and blog website built with Next.js, TailwindCSS, Framer Motion, three.js

- Sorting and Searching Algorithm in C
- Implementing Quicksort, Heapsort, Mergesort, BMH, KMP algorithms in C, and test time complexity with Python
- Semantic Search: Embedding models and Vector DB
- ExternalBrain: Note taking using LLM and STT in Python

Awards and Certificates

- HackMelbourne Hackiethon 2025: Focal - Best Design

Winning Best Design in Hackiethon 2025, A music playing widget built on React.js and TypeScript

- Hack The Box University CTF 2024 Binary Badlands

Joining a team of students from University of Melbourne, testing teamwork skills and deep computing-related technical skills

- CISSA Codebrew Hackathon 2024: Best first year

Winning Best first year in Codebrew 2024, Ramble, built with React.js frontend and Flask backend, solves the problem of manual timetable management by leveraging language model's ability to schedule tasks

- Google Automation Crash Course on Python
- Introduction to Python programming
- Data analysis using Python
- Introduction to Java and Object-Oriented Programming
- Machine Learning (Coursera, Stanford Online)

Learning basics of Machine learning, including math behind neural networks, cost function and more

- Inheritance and Data Structures in Java
- Oracle Certified Associate Java SE 8 Programmer

Skills

- AI / ML: Transformer LM and Diffusion Model with PyTorch
- Programming: C (Algorithms), C++, Python Data analysis / processing, Python website / API design, Java (Object Oriented Design), MySQL Database, Next.js, React.js, Tailwind CSS, Framer motion
- Linux Administration: Ubuntu, Debian, Apache Server, Nginx, Docker, git, OSI Model
- Design: Blender, After Effect, Photoshop, Figma
- Language: Mandarin, English, German, Taiwanese