HAN-FONG HSU

Computing Software Major

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Education

University of Melbourne (2024~now)
Foundation of Algorithm, Calculus, Linear Algebra, Elements of data processing, Object oriented software development, Applied Computation in Bioengineering

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 student from University of Melbourne testing the skill of teamwork 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 task

- Google Automation Crash Course on Python

- Introduction to Python programing

- Data analysis using Python

- Introduction to Java and Object-Oriented programing

- **Machine Learning (Coursera, Stanford Online)**
  Learning the basics of Machine learning including the math behind neural network, cost function and more

- Inheritance and Data Structures in Java

- Oracle Certified Associate Java SE 8 Programmer

Projects

- **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 of streaming text response

- **Train a language model from scratch with PyTorch**
  Pretrain a decoder only language model on text, and tune the 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 analyzer with Tauri

- **Research Paper: Accessing the Effectiveness of LLM on Physical Therapy Questions**
  Research paper investigating on which prompting technique yields the 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 algorithm in C, test time complexity with Python

- Semantic Search: Embedding models and Vector DB

- ExternalBrain: Note taking using LLM and STT in Python

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