Ian Chang

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EDUCATION

Nanjing Hankai Academy — Nanjing, China
A Level Computer Science, Mathematics, Further Mathematics, History, Physics — *Mar. 2022 – June 2024*

University of Waterloo — Ontario, CA
Bachelor of Science, Computer Science with Co-op — *Sep. 2024 – June 2028*

EXPERIENCE

Computer Vision Research — Feb 2023 – Aug 2023
Pioneer Research Program @ Macalester College — *Virtual*
- Proposed an image diffusion transformer model for one-shot image generation
- Implemented model training and inference framework with Pytorch and OpenCV
- Results generated distinguishable images from model trained on a single image

Internship — June 2022 – Oct 2022
ZNotes.org — *London, UK*
- Contributed to the A Level students community by communicating with others in building a note-viewing platform and adding new features
- Created website auto-scrolling feature using React.js

Deep Learning & Robotics Club — Sep 2022 – Jun 2023
Nanjing Hankai Academy — *Nanjing, China*
- Led planning of 1 year club coursework and project road-map for club of 10 people
- Developed deep learning curriculum and taught it to members of the club
- Developed interactive project of self-navigating Raspberry Pi car using Tensorflow, UNets, and OpenCV

PROJECTS

LLaMA1 & LLaMA2 from scratch | *Pytorch, Git* — Apr 2024
- Implement LLaMA versions 1 and 2 by Meta AI from scratch in Pytorch to generate text on Tiny Shakespeare Data
- Validation set loss of 0.99
- Implementation included rotary embeddings, RMSNorm, GQA, etc.

JP-EN translator | *Pytorch, Git* — Jan 2024 – Feb 2024
- Implemented original transformer architecture using Pytorch from scratch and trained it to translate between Japanese and English with teacher forcing

HiraSubs | *JavaScript, Git* — Apr 2024
- Built a firefox extension to automatically add a bar of pure hiragana captions on top of YouTube's Japanese captions which contain kanji

Arch Linux Customization | *Python, Yuck, Bash, Git* — Jan 2024 – Present
- Contributed to Arch Linux community by creating and sharing my own custimizations of Arch Linux using Hyprland (tiling windows manager)
- Wrote scripts in Python and Bash, and Eww for system bar
- Received over 350+ upvotes from community

Chess from Scratch | *Pytorch, Git* — July 2024 – Nov 2024
- Built Chess AI from scratch using reinforcement learning with Monte Carlo Tree Search algorithm in Pytorch
- Scraped past Chess games in pgn format from Lichess.org as training
- Resulting model had elo of over 1500

Hankai Forum | *Vue.js, Express.js, CSS, MongoDB, JavaScript, Azure, Git* — Dec 2023 – Mar 2024
- Built school forum using Vue.js and hosted server on Azure virtual machine
- Used by over 20+ people daily
- Setup database using MongoDB and used Express.js as backend for restful API calls

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, HTML/CSS, Bash
Frameworks: React.js, Node.js, Pytorch, Tailwindcss, Next.js, Django, Express.js
Developer Tools: Git, NeoVim, VS Code, Pycharm, DataSpell, Arch Linux, Jupyter Notebook
Libraries: Pytorch, NumPy, Matplotlib, Pandas, Polars, OpenCV

AWARDS

Google Kickstart (Round B): 1780/8000
American Computer Science League: Perfect Score
Uber Global Hackathon: Regional Finalist