

Ian Chang

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EDUCATION

University of Waterloo

Computer Science, Honours, Co-operative Program

Ontario, CA

Sep. 2024 – June 2029

EXPERIENCE

VoiceCode

Google Gemini Hackathon 2024

May 2024 – Aug 2024

Remote

- Created **Gemini fine-tuning** dataset in **ChatML** format in JSONL file
- Added speech to text functionality using OpenAI Whisper v2 in Next.js with a custom hook

Computer Vision Research

Pioneer Research Program @ Macalester College

Feb 2023 – Aug 2023

- 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

Deep Learning & Robotics Club

Nanjing Hankai Academy

Sep 2022 – Jun 2023

Nanjing, China

- Planned 1 year clubwork and project road-map. Taught software skills including MLPs and CNNs, OpenCV and Tensorflow
- Club project successful proven by working prototype of self-navigating Raspberry Pi car

Internship

ZNotes.org

June 2022 – Oct 2022

Remote

- Created website auto-scrolling feature by **recording last DOM scroll position**, saving position with Express.js backend, and creating smooth transition on returning using React.js

PROJECTS

EnjaLyrics | *Pytorch, FastAPI, SQLAlchemy, Next.js, Tailwindcss, Git*

Apr 2024 – Jul 2024

- Utilized **server side rendering** in Next.js for fetching data, **selection API** for getting selection, **fetch API** for REST API requests to implement website for manual/AI highlighting of Japanese Lyrics
- fine-tuned **LLaMA3-8B** model using **LoRA** with **UnSloth** and **HuggingFace**

LLaMA1 & LLaMA2 from scratch | *Pytorch, Git*

Mar 2024 – Apr 2024

- Implemented LLaMA versions 1 and 2 from scratch in Pytorch to generate text on Tiny Shakespeare Data
- Validation set **loss of 0.99**
- Implementation included **rotary embeddings, RMSNorm, GQA**, etc.

HiraSubs | *JavaScript, Git*

Apr 2024

- Built firefox extension to automatically add a bar of pure hiragana captions on top of YouTube's Japanese captions which contain kanji

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

Chessbot from Scratch | *Pytorch, Git*

July 2023 – Nov 2023

- Built Chess AI from scratch using reinforcement learning with **Monte Carlo Tree Search** in Pytorch
- Scraped past Chess games in pgn format from Lichess.org as training
- Resulting model had estimated elo of **around 1500**

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, HTML/CSS, Bash

Frameworks: React.js, Next.js, FastAPI, Pytorch, Tailwindcss, Next.js, Django, Express.js

Developer Tools: Git, NeoVim, VS Code, Pycharm, DataSpell, Arch Linux, Jupyter Notebook, Google Colab

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