Daixin Tian

Personal Information

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Education

Bachelor of Applied Science and Engineering, Department of Electrical and Computer Engineering, **University of Toronto**, **September 2020 to June 2025 (expected)**

- **Major**: Computer Engineering
- **Minor**: Artificial Intelligence, Robotics
- **Relevant Courses**: Software Engineering; Introduction to Deep Learning; Introduction to Machine Learning; Operating System; Algorithm& Data Structure; Advanced Engineering Mathematics; Programming Fundamentals (C & C++).
- **GPA**: 3.84

Skills

Programming Languages: Python, C, C++, Java, MATLAB, Shell
Machine Learning: PyTorch, Diffusers, TensorFlow, OpenCV, accelerator
Deployment: Flask, AWS EC2, CodePipeline **Database**: TiDB, SQLite
Front-end: Webflow, JetBoot, HTML, css, JavaScript, Node.js

Work Experiences

Machine Learning Research Engineer, Huawei Noah's Ark Lab, Markham, Ontario, Canada, **May 2023 – May 2024**

- Researched and developed Text-to-Image and Text-to-Video generative models namely **diffusion models and transformers**. Implemented optimization techniques on training and inference learnt from papers from academic conferences (CVPR, AAAI, etc.).
- Contributed to bug fixing and optimization of the training code of a **2.5k-starred** Github repository on Text-to-Image generative model: https://github.com/orgs/PixArt-alpha/discussions/119
- Developed and optimized algorithms that lowers the chance of mistaken triggering of Huawei's phone voice assistant by **80%.**
- Designed and tested a generative model for poster layout generation based on text and image content.

Competitions and Hackathons

Full-stack Engineer, VCT Hackathon: Esports Manager Challenge, Online**, October 2024 – November 2024**. https://devpost.com/software/edg-learning

- **Top 25 finalist** out of 3295 participants, winners to be announced in December 2024.
- Designed and implemented an LLM-powered digital assistant for building teams of professional players and answering various questions about Valorant Esport.
- Leveraged extensive data and utilized AWS Lambda and Bedrock to tune our LLM agent through iterative prompting experiments and thorough investigations.
- Deployed back-end services using Flask framework on AWS EC2 with automated integration via CodePipeline and CodeDeploy for continuous deployment.
- Detailed explanations could be found in our final report here.

Team Lead and Full-stack Engineer, Global Power Rankings Hackathon, Online, **August 2023 - October 2023**. https://devpost.com/software/rift-ranks

- Winner as **6th place** out of 1813 participants.
- Developed a user-friendly platform from scratch for discovering comprehensive and accurate global rankings of professional League of Legends teams.
- Deployed back-end integration using Flask framework with gunicorn and nginx; leveraged AWS EC2 and Route53 for a 24/7 service with secured HTTPS connection.
- Researched and implemented two algorithms: PCA and TrueSkill.
- Utilized Webflow for designing user interface and integrated Jetboot to support core functionalities and enhance user experience.

Team Lead and Full-stack Engineer, TiDB Future App Hackathon 2023, Online, **June 2023 – July 2023**. https://devpost.com/software/project_name-wf9l8d

- Awarded as one of **60 Finalists** out of 1466 participants.
- Developed a webpage for collection of machine learning models, integrated with intelligent search functionality using AI chatbot.
- Deployed REST APIs with Flask framework that handles interactions with endpoints from TiDB, an advanced distributed SQL database.

Technical Experiences

Software Lead, ECE444 Software Engineering, University of Toronto, Canada, **September 2024 to December 2024**.

- Led the development of an eCommerce platform using Test-Driven Development.
- Organized team workflows and Git repository, facilitating efficient collaboration and progress with frequent code reviews and pull requests to maintain well-documented code.

Coding Group Member, ECE297 Software Communication, University of Toronto, Canada, **January 2022 to June 2022**. https://github.com/AlezHibali/ECE297_Mapper_pub

- Design and scope a large GIS application using C++ from scratch.
- Implemented Dijkstra's algorithm and A* algorithm to optimize routing and performance.