John Ma

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Education

BSc in Computer Science and Statistics — **University of Toronto**
Specialist Program in Machine Learning and Data Science — *GPA: 3.5*
expecting April 2025

Relevant Experiences

Research Assistant

June 2024 - August 2024 — **University of Toronto**

- Cooperated with engineers and fellow researchers to design a model for estimating biomass.
- Researched and implemented relevant academic literature (MATLAB, PyTorch, JAX) for statistical and machine learning models to estimate biomass from images.
- Contributed to the data collection protocol for the model.

Machine Learning Engineer

Sept 2023 - Current — **UTAT Space Systems**

- Wrote Python scripts to create distributions synthesizing stripes and noise on hyperspectral images to train a 3D diffusion model.
- Debugged CUDA and Python dependency issues in older models, resulting in a more comprehensive overview of past methods.
- Co-authored a paper proposing a novel model using 3D-diffusion to destripe and denoise remote sensing images, presented at the SmallSat Conference 2024.

Hackathon Mentor

May 2023 — **MetHacks**

- Taught participants how to utilize popular JavaScript and Python libraries (e.g., React, TensorFlow) for their hackathon projects.
- Mentored teams resulting in $\sim 90\%$ of them completing functional prototypes by the end of the event.

Build Infrastructure Developer

Sept 2021 - Dec 2021 — **Blackberry QNX**

- Migrated old Jenkins jobs from VMs to Docker, freeing $\sim 95\%$ of resources for system updates.
- Automated container documentation with clean, efficient, bash and Python scripts.
- Developed a new plugin to replace an unreliable Jenkins function, achieving a solution with $\sim 95\%$ uptime making it significantly increasing the reliability of jobs and pipelines
- Contributed to code reviews for QNX, verifying that the code is functional and robust

Projects

Soccer Robot *(2024)*
Written in C, a winning robot for RoboSoccer Competition (Code and videos available upon request)

Remote-Sensing Hyperspectral Image Denoising and Destriping model (Oral, Paper & Code) *(2024)*
A machine learning model that denoises and destripes hypersprectal images using 3D-diffusion, presented at SmallSat 2024

Drone Detection and Position Prediction model (YOLOV8 and a LSTM) (Paper upon request) *(2023)*
A trained model for detecting position of drones and predicting their trajectories

Intelliverse (A 3-Layered Architecture Smart Phone Application) *(2022)*
A hackathon winning smart-phone application helping people understand the sentiment behind texts, with a screenshot.
Made using TypeScript, ReactJs, NodeJs, mongoose, MongoDB, GraphQL

Technical Skills

Languages: C/C++, Java, Python, Javascript/Typescript, HTML+CSS
Libraries/Frameworks/DB : PyTorch, Keras, Tensorflow, JAX, Nodejs, ReactJs, MongoDb, Firebase, Relational Database(mySql)
Dev Tools: Docker, Docker-swarm, Jenkins, Git, SVN
Relevent Coursework: Software Engineering, Software Design, System Tools & Programming, Data Structures and Algorithms, Machine Learning Theory, Image Understanding, Operating System, Regression Analysis, Stochastic Processes, Fundamentals of Robotics and Automated Systems
Soft Skills: Time Management, Problem Solving, Self-learning, Communication, Presenting, Adaptability

Achievements & Certifications

ScoreSpace 30 Game Jam 1st Place Winner (Developer's Choice) *(2024)*

Fundamentals of Accelerated Computing with CUDA C/C++ certificate from NVidia *(2023)*

DS3 Datathon Finalist *(2023)*

Hack The Valley 7 - Top 5 Hacks, Best Discovery Hack, Most Creative Use of Github *(2022)*