JAYDEN YU

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TECHNICAL SKILLS

Languages: Python, C/C++, Rust, JavaScript, SQL/KDB, Bash, Lua
Tools: PyTorch, TensorFlow, NumPy, Pandas, Node.js, FastAPI, MongoDB, Linux, FreeBSD, AWS

EXPERIENCE

Lumenos AI   San Francisco, California
Founding Engineer | Python   *Sept 2024 - Present*
- Building **Generative AI** recommendation systems as a **Stealth Startup**

Conduit Commerce   New York City, New York
Software Engineering Intern | Python   *June 2024 - Dec 2024*
- Built the entire backend infrastructure in **FastAPI** from scratch
- Dockerized and maintain the production app

OncAI   San Francisco, California
Machine Learning Engineer Intern | Python   *Jan 2024 - May 2024*
- Engineered a **3D UNet Diffusion Model** to render synthetic CT/PET scans for medical **data generation**
- Trained a ResNet discriminator on real data with **88%** test accuracy to quantify a Diffusion Model's performance
- Implemented transformation, noise injection, and cutout **data augmentation algorithms** to enhance **learning robustness**, yielding an accuracy increase of **13%** on unseen datapoints
- Added new functions and tasks to a **Valohai MLOps pipeline** to unify data ingest interfaces
- Implemented **Python** automation scripts for medical record data extraction, processing **up to 900** records daily

University of Waterloo   Waterloo, Ontario
Undergraduate Research Assistant | Python   *Oct 2023 - June 2024*
- Researching **automated proof generation** using **LLM's** and performing **proof verification** with **Coq**
- Created training datasets consisting of **over 1000 verified proofs** from Coq based mathematical corpuses
- Fine-tuned the DeepSeek-Math-7B LLM from HuggingFace to generate proofs from problem statements
- Translated natural language mathematical problem statements to coq script manually as a validation set

Ledn Inc   Toronto, Ontario
Quantitative Developer Intern | Rust, Python   *Sept 2022 - Dec 2022*
- Engineered from scratch a **Rust** based market data consolidator to decrease processing latency **by over 50%** when compared to an OSS Python implementation by adding multi-threading and asynchronous fetching
- Designed the data flow and storage of a **ML** quant trading product in **Python** and **Rust**, through researching various limit order models, efficient documentation, and frameworks testing
- Created datasets using **KDB, SQL** from market data to highlight features such as spread, volatility, and toxicity
- Managed an **AWS EC2** instance to source, store, and update modeling data and host a KX Dev environment

EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Mathematics (Honours) in Computer Science, Minor in Pure Mathematics   *Sep 2020 – April 2025*
- **Relevant Coursework:** Programming Languages, Computer Vision, ML, AI, Algorithms, Data Structures, OS, OOP, Numerical Computation, Compiler Construction, Formal Methods, Computer Architecture, Galois Theory, Abstract Algebra, Real Analysis, Quantum Information Science, Advanced Linear Algebra, Differential Geometry

PROJECTS

RustOS | *Rust*   *May 2024 - Present*

Implementing a bare metal **OS kernel** to support interrupts, virtual memory management, and asynchronous multitasking in **Rust**.

Corrupted ResNet | *Python*   *Dec 2023*

Trained a ResNet50 model on the TensorFlow flowers dataset with standard and corrupted (mislabelled) labels with different loss fn's to research the effects of corrupted data.