Jishnu Jetwani

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Education

University of Waterloo Waterloo, ON

*B.Math Computer Science + Statistics Double Major (Co-op) - **3.88/4.00***

- $18,000 René Descartes **National Math Scholarship** (One of 10 awarded).

Experience

LlamaIndex San Francisco, CA

Applied Research Engineering Intern (ML) *Incoming Summer 2026*

- Joining the R&D team researching NLP and RAG for multimodal agentic document understanding.

Machine Learning Engineer | *PyTorch, SQL, NumPy, C++, Matplotlib* Waterloo, ON

Watstreet (Algorithmic Trading Team) *Dec 2025 - Present*

- Created a market regime detection model with **70%** prediction accuracy (over 6 regimes) in testing by implementing a Long Short-Term Memory neural network with walk-forward cross-validation.
- Improved F1 regime classification by **54%** through rebalancing training/backtesting windows to accurately match proportions of regime labels in training data, thus preventing overfitting.
- Classified **20+** years of market data into a regime labelled dataset through implementing a Hidden Markov Models and K-means clustering, with over **65%** agreement between models.
- Engineered market features in Python (MACD, RSI, ATR) with correlation checks to reduce model noise.

Researcher & Data Scientist Intern | *C++, SciPy, R, Matplotlib* Calgary, AB

University of Calgary, Youreka *Jan 2024 – June 2024*

- Co-authored research on beta-carotene supplementation and human health, presenting to **50+** people.
- Identified statistically significant correlations across **1000+** samples by conducting hypothesis testing (Pearson/Wilcoxon/t-tests) in R/SciPy to quantitatively validate experimental outcomes.
- Reduced total processing time by **40%** through automating data pre-processing with C++ algorithms.

Projects

Deep CFR Leduc Poker Bot | *PyTorch, NumPy, FastAPI, PostgreSQL, Docker, AWS*

- Implemented a 2-player Poker environment with a tabular Counterfactual Regret Minimization (CFR) solver in order to generate clean Nash-strategy datasets.
- Optimized CFR training times by **30%** through replacing string-keyed tables with integer infoset IDs.
- Trained a 2-layer network on **50k** CFR dataset hands, achieving **+0.1** chips/hand vs a strong heuristic strategy.
- Deployed the trained policy as a stateful ML service (FastAPI, PostgreSQL, Docker, AWS) featuring persistent game logging and SQL analytics.

roboticArm (RL Environments) | *Python, MuJoCo, Gymnasium, NumPy, Pandas, Matplotlib*

- Constructed an end-to-end RL environment generator that trains a multi-joint arm to grab cups in MuJuCo.
- Increased grasp-success rate from **45%** to **95%** by training on progressively harder environments (varied friction, distance, etc.) and through PPO hyperparameter tuning.
- Built an automated harness to benchmark **10** PPO checkpoints, reaching optimal success at only **72k** timesteps.
- Developed a CLI chatbox that parses user input with Gemini API to generate user-specific environments.

Awards

Canada IPhO Selection Camp (CPhO) — Invited as **one of 15** national finalists from **2000+** competitors.

Canada IOAA Selection Camp — Ranked **10th nationally** (Bronze award) in the CAAO contest.

AIME Qualifier, **BPhO Gold Award**, **Lloyd Auckland Workshop Invitee** (Top **70/20,000** Fermat Contest).

Technical Skills

Languages: Python, C, C++, SQL, TypeScript, JavaScript, HTML/CSS, Java, Bash
ML/Data: PyTorch, Tensorflow, NumPy, Pandas, SciPy, Matplotlib, R
Web/Cloud: Next.js, React, Node.js, FastAPI, PostgreSQL, MongoDB, AWS, Docker, Tailwind
Tools: Git/GitHub, Linux, CI/CD, RESTful APIs, CRUD, Azure, Excel, Jupyter Notebook