Yuvraj Sharma

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EDUCATION

University of Western Ontario | London, ON *April 2028(Expected)*
Honours Specialization in Computer Science (BSc) Minor in Data Science *(3.6/4.0 GPA)*
- Relevant Coursework: Data Structures & Algorithms, Linear Algebra, Machine Learning, Statistics for Data Science, Database Systems, Frontend Development, Discrete Math

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TECHNICAL SKILLS

Languages & Frameworks: Python (NumPy, Pandas, scikit-learn, TensorFlow, PySpark), SQL (PostgreSQL, MySQL), JavaScript (React.js, Node.js), Teradata
Data Analysis & Visualization: Network Analysis (NetworkX), Predictive Modelling (Random Forest, XGBoost, Linear Regression), Statistical Analysis (t-tests, correlations, regression), Matplotlib, Seaborn, Plotly, PowerBI, Tableau, VBA, Splunk
Tools & Platforms: Jupyter, Git, Docker, AWS, Azure, Snowflake, BigQuery, Excel, Databricks, GCP, Prompt Engineering

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RELEVANT EXPERIENCE

PFSL Investments Canada Ltd. **Mississauga, ON**
Operations Analyst Intern *May 2025 - August 2025*
- Respond to **80-100 daily client** and advisor emails regarding KYC updates, redemptions, transfers, and account maintenance, ensuring a **95% same-day resolution rate**.
- Review and analyze an average of **75+ KYC**, subsequent investment, and PAC (Pre-Authorized Contribution) forms daily for accuracy and completeness before processing.
- Coordinate with branch managers on client documentation, ensuring correct routing of **~40 forms daily** to fund companies or internal teams for timely processing.
- Processed redemptions, contributing to a **20% reduction** in processing backlog through proactive workflow engagement.
- Assisted in batching and organizing over **500 client and PFSL documents**, streamlining document retention and routing processes to improve operational efficiency and compliance.

Western Quantitative **London, ON**
Co-President & Quantitative Developer *September 2025-Present*
- Led a 20-member quant research division, developed models for **high-frequency trading**, **algorithmic strategy design**, and **market microstructure research**, overseeing 5+ active projects per semester.
- Co-developed CryptoCop, a real-time **crypto arbitrage** engine that scanned 10,000+ price pairs daily to identify cross-exchange inefficiencies and optimize execution across 5+ major exchanges using **Python**, **FastAPI**, and **PostgreSQL**.
- Built a sports and **prediction-market arbitrage** platform analyzing 50,000+ odds updates per day from Kalshi, Polymarket, and sportsbook APIs to detect **pricing inefficiencies** and **alpha opportunities**.

Western Varsity Basketball Analytics **London, ON**
Performance Analyst *June 2025 - Present*
- Engineered Python pipelines (**Pandas, NumPy**) analyzing 1,000+ player possessions and seasonal OUA stats to model efficiency, archetypes, and on-court synergies for recruitment targeting and lineup optimization.
- Automated data cleaning and **correlation analyses** through modular notebooks, reducing manual scouting prep by 40% and improving reproducibility.
- Created analytical dashboards (**Matplotlib, Seaborn**) and pre-game reports used by coaches to adjust matchups and rotations, driving data-driven strategy adoption.

PROJECTS

NBA Roster Geometry Analysis | Carnegie Mellon Sports Analytics Conference (Placed in Top 10%)
Explored how network geometry and salary-performance correlations influence NBA team playoff success
- Engineered multi-season NBA team networks with NetworkX, integrating salary + performance metrics into 10,000+ graph connections for topology analysis.
- Applied statistical testing (Pearson, t-tests, Mann-Whitney U) and Random Forest models, achieving ~82% playoff prediction accuracy across five seasons.
- Built a reproducible end-to-end data pipeline (web scraping, analysis, visualization) using Python, Docker, Git, Matplotlib/Seaborn.

Algorithmic Alternative Markets Trading Model | Project FastAPI, React.js, Node.js, PostgreSQL, Pandas, NumPy, Docker
Designed a live market data pipeline to surface pricing inefficiencies and optimize position sizing using quantitative models.
- Built a real-time alternative-market data pipeline using FastAPI, Pandas, NumPy, and PostgreSQL, aggregating 100k+ price feeds/day across 30+ independent markets.
- Designed quantitative modelling frameworks (Monte Carlo simulation, Kelly-based allocation engine) to detect 5,000+ daily cross-market pricing inefficiencies and optimize capital allocation.
- Developed a full-stack analytics dashboard (React, Node.js, TailwindCSS), visualizing live market dislocations, expected value, and risk-adjusted returns

Resume To Job Description Matching Engine | Python, LangChain, Sentence Transformers, FastAPI
Built an LLM-driven resume–job matching system to assess fit, identify skill gaps, and suggest resume improvements.
- Architected an LLM-orchestrated resume–job matching system using LangChain to coordinate skill extraction, semantic similarity scoring, and explainable match reasoning.
- Implemented a hybrid NLP pipeline combining TF-IDF baselines, sentence-transformer embeddings, and cross-encoder re-ranking, achieving a 42% improvement in precision@k over keyword-based matching.
- Built an explainable skill intelligence layer that identifies missing and weak competencies and generates grounded resume optimization suggestions, deployed via a FastAPI service for scalable evaluation.