

SREE PRANAY SUBRAMANIAN

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EDUCATION

University of Waterloo

Bachelor of Computer Science and Finance (Dual Major - Honours, Co-op) | Year 1 GPA: 3.7

Waterloo, ON

Sep 2025 – May 2030

EXPERIENCE

Software Development Engineer - PlayStation, Sony Interactive Entertainment

Incoming SDET working in the Quality Engineering and Software Development teams

May 2026 – Sep 2026

Waterloo, ON

Quantitative Analyst

Financial Analysis and Risk Management Student Association

Jan 2026 – Present

University of Waterloo

- Programmed a **SABR Volatility Model** leveraging volatility surface analysis to provide **accurate IV tracking and improved option pricing relative to the market**. Optimized a **stochastic calculus function**, with core metrics **Alpha, Beta, Rho, and Nu**
- Coded a **ML model** to make correlation driven American market predictions, using earlier-opening, Asian/emerging Markets.
- Engineered a **Random Matrix Theory covariance estimator** in Python applying Marchenko–Pastur **eigenvalue cleaning** to denoise a 50 stock covariance matrix, identifying 92% of the spectral decomposition as estimation noise. **Improving Sharpe ratio by 10% over the sample covariance baseline (0.732 → 0.808)**

External Affairs Coordinator

UW Computer Science Club

Jan 2026 – Present

University of Waterloo

- Coordinated and maintained ongoing relationships with top club partners like Google, Tesla, QNX, and more
- Prepared enhanced sponsorship outreach material/documentation including, club financial statements, term forecasts and more
- Delivered executive presentations and sponsorship proposals to prospective partners, driving compelling propositions

Student Council President

St. Augustine Catholic High School

Sep 2021 – Jun 2025

Markham, ON

- Led a **30+ member team** and directed logistics for 20+ major events including Games Nights and School Carnivals
- Oversaw the **financial organization of over \$35,000** in revenue for an annual Semi-Formal Event, managing all sales logistics
- Introduced a data-driven feedback collection initiative which increased student interest by 64% in the following 4 events

Sponsorship Committee Lead Manager

Business Leadership Council - Business Banquet for the SickKids Foundation

Feb 2025 – Jun 2025

St. Augustine CHS, Markham

- Raised **\$45000** for the **SickKids Foundation** as the Sponsorship lead, for a business banquet event, organized by the council
- Secured sponsorships from firms like Qualcomm, Starbucks, and TD Bank through strategic outreach, networking, and more
- Generated **\$10000+ revenue** for the charity, through organizing Silent Auction logistics, with high-value donations and prizes

PROJECTS

ProximusAI - Hackathon Project | Gemini Flash 2.0 API, YOLOv8n, MiDaS, paddleOCR, OpenCV, Whisper, ElevenLabs

2026

- Developed a **real time computer vision application** to assist blind and visually impaired users by providing active environmental analysis, object detection, depth estimation, and contextual audio feedback
- Integrated **YOLOv8n, MiDaS, Gemini API, Whisper, ElevenLabs, and PaddleOCR** to deliver real time object classification, monocular depth estimation, velocity tracking, OCR, and neural text to speech within a 36 hour development cycle

AlphaBL-Portfolio Creation and Optimization Model | Python, NumPy, pandas, yfinance, PyPortfolioOpt

2025

- Engineered strategic stock selection and **portfolio optimization system** to consistently beat an average of the TSX/S&P500
- Implemented composite stock scoring using metrics such as **Alpha, Sortino, Momentum, and Beta**, for optimal selection
- **Programmed Black-Litterman optimization**, for weightage distribution with Sharpe ratio maximization, while also following diversification constraints (40% sector/15% position) to maintain portfolio balance while simultaneously achieving excess returns

LoanOracle | Python, XGBoost, Scipy, Sklearn, Matplotlib, Streamlit

2025

- Built an **XGBoost powered ML model**, trained on 60K+ samples, to **predict loan default probability** using financial profiles
- Achieved professional grade performance metrics: **0.7 F1-score, 0.52 Gini coefficient, 93% precision** at optimal threshold
- Encoded 30+ risk indicating features and implemented train/test validation to prevent data leakage
- Conducted model evaluation using **ROC-AUC (0.75 score)** analysis, KS statistics, and precision-recall curves to optimize output

Gun Smash Bros | Java, SuperSocketMaster, Object Oriented Programming, Swing

2023

- Designed a seamless 2D, platformer, PvP gun game using Java and **object-oriented programming principles**
- Implemented **live multiplayer/device networking** with Java Socket Connection libraries and a GUI with Swing

TECHNICAL SKILLS

Skills: Python, C, Java, Javascript, Racket, Next.js/React.js, Object Oriented Programming, Leadership, Finance and Quantitative Analysis

Frameworks: XGBoost, Tensorflow, NumPy, pandas, SciPy, Scikit Learn, Sklearn, Matplotlib, PyPortfolioOpt, Tailwind CSS, yfinance,

Vercel, Gemini/Claude (AI API) Integration, OCR, SLAM, and more