OM JANAMANCHI

732-947-2233 | omjanamanchi@gmail.com | linkedin.com/in/omjanamanchi | github.com/omjanamanchi | omjanamanchi.github.io | Green Card Holder

EDUCATION

Purdue University **Expected 2028**

B.S. in Computer Science, Minors in Mathematics & Finance | ***GPA:** 4.00* | ***SAT Math:** 770* | ***3X Hackathon Winner*** *West Lafayette, Indiana*

- **Selected Coursework:** Data Structures, Algorithms, Computer Architecture, Multivariate Calculus, Linear Algebra, Probability, Management
- **Activities:** Computer Science Ambassador, College of Science Dean's Council Member

PROFESSIONAL EXPERIENCE

Incoming Software Engineering Intern @ Whisp & RockABlock **Winter 2025**

Data Science Engineer **August 2024 – May 2025 | Video | Poster**

The Data Mine - Delta Faucet Company *Indianapolis, Indiana*

- Engineered Non-Homogeneous Poisson Process (NHPP) failure prediction model analyzing 200,000+ historical warranty claims, improving forecast accuracy by 90% across 6-year product lifecycles and enabling data-driven inventory optimization
- Built full-stack web application empowering non-technical Delta teams to visualize SKU-level failure forecasts, reducing overstock expenses and optimizing replacement part planning for Fortune 500 manufacturing operations

CS 19300 Tools (Git/LaTex) – Teaching Assistant **August 2025 – December 2025**

Purdue Computer Science *Indianapolis, Indiana*

- Instructed 200+ students in industry-standard development tools including Git version control, GitHub workflows, and LaTeX document preparation, supporting technical skill development through office hours and Ed Discussion forum monitoring
- Designed and developed course homework assignments while managing the entire class GitHub organization, streamlining assignment distribution, submission workflows, and version control practices for efficient course operations

CS 18000 Bridge Program (Object-Oriented Programming) – Teaching Assistant **June 2025 – August 2025 | Website**

Purdue Computer Science *Indianapolis, Indiana*

- Mentored 70+ incoming Computer Science freshmen in foundational Java programming and object-oriented design principles, delivering guided labs, practice problems, and personalized support to strengthen problem-solving capabilities

Computer Science Research Associate **August 2023 – September 2024 | Dharmitra | Documentation | Article | Video**

UC Berkeley MITRA Data Team *Remote*

- Engineered NLP algorithms achieving 90% accuracy for OCR correction on 10,000+ Sanskrit and Tibetan manuscripts at UC Berkeley BAIR Lab, preserving centuries-old Buddhist texts through advanced natural language processing techniques
- Developed AI-based metadata classifier with 80% precision for multilingual dataset categorization, reducing data inconsistencies by 25% through deduplication algorithms and presenting work at international virtual conference attended by the Dalai Lama

PROJECTS

GPU Acceleration – Market Microstructure Prediction | *Python, CUDA, PyTorch* **August 2025 – Present | GitHub | GPU Simulation**

- Engineered custom CUDA kernels for high-frequency trading signal generation, achieving 74 billion features/second and 2.89 billion predictions/second on NVIDIA L4 GPU with sub-nanosecond latency through fused kernel architecture
- Optimized market microstructure feature computation (OFI, spread, volatility) using memory coalescing, delivering 25x speedup over PyTorch with production deployment on Modal cloud infrastructure

Crypto Triangular Arbitrage | *Python, Cython, Bellman-Ford, Binance WebSocket* **February 2025 – Present | GitHub**

- Built real-time triangular arbitrage detection system using optimized Bellman-Ford algorithm on Binance exchange, processing live order book data via WebSocket streams to identify cross-currency profit opportunities
- Engineered synthetic data pipelines with ARIMA model simulations for backtesting 1M+ trades, improving algorithm accuracy 5x through VWAP and Z-score imbalance signals for trade quality optimization

FinMath – Financial Mathematics Library | *C++17, Python (pybind11), CMake* **September 2024 – Present | GitHub**

- Developed high-performance C++ financial mathematics library with Python bindings, achieving 57% speedup in interest calculations (0.0121s vs 0.0217s) and 2300% improvement in Black-Scholes option pricing compared to GSQuant
- Optimized Binomial Option Pricing model with 700% performance improvement (0.7503s vs 5.2394s), enabling real-time calculations for high-frequency trading applications through efficient C++17 implementations

STUDENT ORGANIZATIONS

Boiler Quant | *Director of Industry Relations & Quant Analyst* **September 2024 – Present | boilerquant.com | @boilerquant**

- Built and maintained an alumni network of 254+ quantitative finance professionals, orchestrating career development initiatives including industry panels, technical mock interviews, and one-on-one mentorship sessions that facilitated member placements at top firms
- Secured corporate sponsorships from 160+ quantitative trading firms and coordinated immersive experiences including Chicago and NYC office tours at Old Mission, Akuna Capital, PEAK6, Gelber Group, Belvedere Trading, Valkyrie Trading, TransMarket Group, IMC Trading

Computer Science Club | *President* **September 2024 – Present | csclubpui | @csclub_purdueindy | Article**

- Directed operations and strategic growth for 120+ member organization, organizing technical workshops on AI/ML, software engineering panels with industry experts, and networking events that strengthened campus CS community engagement
- Led end-to-end planning and execution of Hack Indy 2026, a university-wide hackathon attracting 200+ participants, while securing sponsorships from 15+ industry leaders including Jane Street, Susquehanna International Group, G-Research, NorthMark Strategies Group, and Eli Lilly

TECHNICAL SKILLS

Languages: Python, C++, C, Java, C#, R, SQL, TypeScript, JavaScript, HTML/CSS, LaTeX, CUDA, Bash
Libraries/Frameworks: PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, scikit-learn, Transformers, Streamlit, React Native, Node.js, TailwindCSS
Tools: Git, GitHub, Docker, VS Code, PyCharm, IntelliJ IDEA, CLion, Android Studio, Linux, AWS, Vercel
Technical: Machine Learning, NLP, Computer Vision, High-Frequency Trading, Algorithm Optimization, RESTful APIs, WebSocket, CI/CD