Vikram Oddiraju

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EDUCATION

Purdue University — West Lafayette, IN
B.S. in Computer Science — August 2021-May 2025
Minors: Mathematics and Economics

Stony Brook University — Stony Brook, NY
M.S. in Computer Science — January 2026-Current

Programming Languages/Tools: C, C++, Linux Kernel, MATLAB, SQL, Git, Bash, GDB, Docker, CUDA

WORK EXPERIENCE

Old National Bank (1834 - Wealth Management Division) — Indianapolis, IN
Equity Research Intern — Jun 2024 – Aug 2024

- Provided a **sell recommendation on Microchip Technology**, potentially saving clients in aggregate **$145 million** in equity exposure
- Offered portfolio strategy recommendations based on a mix of **fundamental** and **quantitative** analysis
- Developed a custom screener in **Python** using a combination of **Bloomberg API** and SEC filings data for use within a portfolio strategy (utilized **Huber regression** on ROIC – WACC relative to EV/IC)

Volante Technologies — Jersey City, NJ
Software Engineering Intern — Jun 2022 – Aug 2022

- **Contributed** to the security architecture on a **Java** team, working on a payments SaaS product, QuickConnect
- **Programmed** a way to generate **tokens for transactions** between banks and counterparties using one way HMAC-SHA256 keyed hashes for each financial identifier (SWIFT-BIC, routing no., counterparty account no., customer ID, transaction amount)
- Stored **non-sensitive transactional data** for analytics into a **SQL** database using RESTful APIs in **Spring Boot**
- Customers using this service include JPMorgan Chase, Bank of New York Mellon, and HSBC

PROJECTS

(C++) Scientific Computing - Stochastic Differential Equation Simulation — Oct 2025

- Developed a C++ **multi-level Monte Carlo** engine for speeding up the calculation of **value at risk** and **conditional value at risk** for financial portfolios
- Derived an **optimal number of runs per refinement level** to achieve the most accurate and least computationally intense way to obtain the expectation of the stochastic differential equation

(C/ASM) Asynchronous Event Scheduling in XINU OS using Assembly Callback — April 2025

- Programmed a real time alarm and **callback system** within the **XINU kernel** to handle events asynchronously at a fixed time interval using C and asm
- Wrote the callback function in **x86 asm** for reliable and fast testing
- Leveraged the kernel's **programmable interval timer** and managed process state during kernel mode context switches

(Python) AI/Computational Mathematics - Reinforcement Learning based Iterative Solver — Sep 2025

- Built a **PPO reinforcement learning agent** to solve Ax=b using an iterative solver, FGMRES, with adaptive sized diagonal block preconditioning of the matrix A
- **Achieved** up to **4x less iterations** computed than fixed-block FGMRES by leveraging Stable Baseline 3's library for environment and policy optimization

(Python, Docker) Computer Networking - Network Congestion Control Simulation — April 2025

- Simulated a **LAN** using **Docker** containers (client/server) to benchmark different TCP congestion control algorithms across 4 emulated compromised network conditions
- **10x improvement in bitrate** from **BBR** when compared to **CUBIC** congestion control under compromised network conditions

ACTIVITIES

Purdue Space Program - Satellites — West Lafayette, IN
Command & Data Handling Team — Jan 2023 – Dec 2023

- Wrote a trade study report on the **I2C** data bus and compared it to **UART** and **SPI** serial communication for use within CubeSat
- Modified **FreeRTOS** for CubeSat Space Protocol **networking** requirements