

# PRANAV JOSHI

New York University, Tandon School of Engineering

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## Education

New York University, Tandon School of Engineering

Master in Computer Science

Aug'25 - Present

GPA: -/4.0

National Institute of Technology Karnataka, Surathkal

Bachelor of Science in Computer Science

Jul'19 - May'23

GPA: 8.89/10

## Technical Skills & Coursework

**Languages & Infrastructure:** C, C++, Python, Javascript, Docker, Kubernetes

**Tools and Frameworks:** Git, Node.js, React.js, SQL Server, Express.js, AWS, Tableau, OBIEE, Lambda

**Key Coursework:** Financial Computing, Machine Learning, Information Retrieval, Deep Learning, Wireless Networks

## Publications

- **Pranav Joshi**, Suresh Kamediya, Ritik Kumar, B. R. Chandavarkar. "Survey on Game Theory-Based Security Framework for IoT" *Submitted to XVIII International Conference on Data Science and Intelligent Analysis of Information, 2023* [First Author]

## Work Experience

Wells Fargo, Bangalore (India) | Software Engineer

July'23 - June'25

- Engineered a Data Warehousing application that generated deal performance reports for 100+ bankers/relationship managers. This system automated ETL workflows from 7+ source systems using SQL Server and SSIS packages (reducing processing delays by 30% ).
- Automated the full data pipeline (ingestion, transformation, and interactive reporting) for 100+ stakeholders and integrated with Power BI and OBIEE for interactive reporting, collectively **reducing manual reporting time by 60%** and improving decision-making.

Wells Fargo, Bangalore (India) | Software Engineering Intern

May'22 - Jul'22

- Built a Trading Suggestion Platform for equities (stocks) that predicts Buy/Sell options by leveraging various strategies and financial indicators (like RSI, MACD, VWAP, etc.) along with the option of backtesting one's strategy.
- Created on a Microservice-Architecture for the Back-End equipped with proper load balancing strategies and API Gateways which was finally hosted on GCP's Google Kubernetes Engine.

## Research Experience

Fuzzing of EV Protocols | Independent Research Work

April'24 - November'24

**Professor:** Research Associate Professor, Rigel Gjomemo, University of Illinois, Chicago

- Engineered fuzzing (cubersecurity technique to detect security vulnerabilities in a system) of state of the art EV charging protocols like **ISO15118 20.0** and **OCPP (Open Charge Point Protocol)**
- Pioneered the development of 2 novel testbeds for EV charging protocols (ISO 15118 and OCPP), enabling comprehensive security analysis and vulnerability identification, aligning with research goals.
- **Onboarded and mentored 3 undergraduate students**, guiding them through research objectives and technical methodologies to accelerate project contributions.

Empirical Evaluation of CoDel Active Queue Management Algorithm | NITK | Report

Aug'23 - Dec'23

- Conducted an in-depth performance study of the CoDel Active Queue Management algorithm using the NeST tool and Linux network namespaces, evaluating its mathematical control law and identifying key limitations, such as the lack of correlation between queue size and drop interval.

## Key Projects

Multi-threaded BFS Web Crawler | Information Retrieval | Project

Sep'25 - Sep'25

- Designed and implemented a high-performance, multi-threaded Web Crawler in Python capable of executing Breadth-First Search (BFS) up to 100 depth levels.
- Optimized concurrency and scalability by leveraging a Redis-backed queue for thread-safe URL management across a configurable thread pool (e.g., tested with 200 threads).
- Achieved a target crawl rate of 5,000 pages per run in a time frame of 2 minutes using dynamic priority scoring and integrated the DuckDuckGo API to fetch the top 20 search results for query-based crawling.

LLM Based Book Recommendation System | Machine Learning | Project

Aug'25 - Sep'25

- Developed a semantic book recommendation engine using large language models (LLMs), vector embeddings, and zero-shot classification to match users with books by content similarity, genre, and sentiment
- **Achieved greater than 90 % precision** (or your measured metric) in returning relevant recommendations (based on user feedback or internal testing)
- **Reduced recommendation latency to less than 1 second per query** (or your measured time) by optimizing vector search and prompt management