

PRABHANJAN VINODA BHARADWAJ

+1(919) 527-9000 — pvinoda@ncsu.edu — [linkedin.com/in/prabhanjanvb](https://www.linkedin.com/in/prabhanjanvb) — github.com/pvinoda — [YouTube Portfolio](#)

Education

North Carolina State University

Dec 2024

Master of Computer Science, Focused on Distributed Systems; GPA: 3.8/4.0

Raleigh, North Carolina, USA

Coursework: Operating Systems, Design and Analysis of Algorithms, Automated Learning and Data Analysis, Software Engineering, Neural Networks, Parallel Systems, Generative AI for Software Engineering, LLMs in Security.

JSS Science and Technology University

May 2021

Bachelors of Engineering in Electronics and Communication; GPA: 9/10

Mysuru, India

Coursework: Data Structures, Computer Networks, Linear Algebra, Control Systems, Robotics and Computer Vision, VLSI.

Technical Skills

Languages and Tools: Python, Java, SQL, C, Javascript, Scala, Bash, C++, MATLAB, Arduino, Git, GitHub, JIRA

Technologies and Databases: FastAPI, Flask, Spring Boot, Django, GraphQL, gRPC, Node.js, React.js, HTML, Web-Socket, Asyncio, REST, Pandas, MLflow, Langchain, Docker, Kubernetes, Jenkins, Apache Spark, AWS, Kafka, MySQL, Grafana, Postman, SQLite, PostgreSQL, Druid, TimescaleDB, MongoDB, Elasticsearch, PyTorch, Redis, pytest

Experience

Software Engineering Lab, NCSU

August 2023 – Present

Generative AI Research Assistant [Git]

Raleigh, North Carolina

- Securing the training data of LLMs against poison attacks and backdooring threats, optimizing model stability by **50%** through rigorous evaluation and retraining. Adapting this **open source** security algorithm into [SEEDGuard.ai](#).
- Engineered a scalable infrastructure for Code Search models on HuggingFace with [Dr. Bowen Xu](#) and issued it to [PyPI](#).

Hewlett Packard Enterprise

August 2021 - July 2023

Software Development Engineer - Cloud Data Services [Recommendation]

Bengaluru, India

- Developed a **FastAPI** task framework to achieve **parallelism** with multiple pools of worker nodes, leading to a **70%** faster response time. This optimized resource allocation reduced storage operational costs by **\$500,000** annually.
- Delivered precise workload start time predictions for **async replication** across data centers, ensuring **92%** accuracy in latency estimation. Improved the speed of [Nimble Flash Storage](#) devices through distributed ETL processing.
- Spearheaded a machine learning-driven drift detection feature, to augment the analytics of HPE [Infosight](#) by **25%**. Built a comprehensive API in correspondence with **Kafka** to seamlessly serve drift chart metadata and enhance visualization.
- Accelerated the percentile compute of IOPS by **400%** using the [T-Digest](#) library, achieving notable speed (**140 ns per add**). Reduced the lines of code by **50%** through a transformative shift from REST to **GraphQL/gRPC** interface.
- Led interns** in diagnosing the bugs within a scheduling algorithm to refine the selection of lean time periodicity based on pod data. Packaged the dependencies for **50+ ML models** with **Poetry** and wrote a **tox** enabled **unittest** suite.

Hewlett Packard Enterprise

February 2021 – July 2021

Software Engineer Intern - Storage Research and Development

Bengaluru, India

- Devised an optimization approach to unify **5 SQL queries** into two serial queries, leading to a **fivefold** performance boost. This solution enabled asynchronous data retrieval across **150+** parallel systems using **Asyncio** coroutines.
- Collaborated on building CI/CD pipelines, resulting in reduced deployment failures in storage fleet clusters. Gained expertise in managing over **350** hosts within a connection pool using **database sharding** techniques.

Personal Projects

Distributed Systems — Cloud — Backend Engineering

 [Git]

- Architected a high-performance MySQL database on **EC2** instances, featuring a master-slave structure to accommodate **12,000** ride-sharing app users, while orchestrating **dockerized** carpooling features using **Zookeeper** and implementing a load balancer for a remarkable throughput of **500 mbps**.

Adding Features to XINU — An Operating System for Embedded Systems

- Constructed a memory mapping scheme in XINU OS with support for demand paging. Allowed for Second Chance and Aging Page replacement policies. Implemented lock systems and priority inheritance mechanisms in C and Assembly.

Leadership and Awards

Led the **electronics team** which secured **11th rank** in the [CANSAT](#) competition conducted by **NASA** at Virginia Tech, USA.