Archana Ganesh

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EDUCATION

University of Massachusetts, Amherst — **Amherst, MA, USA**

Master of Science in Computer Science — *Sep, 2022 - May, 2024 (Expected)*

- **CGPA**: 3.83/4.0
- **Relevant Coursework:** Advanced Algorithms, Theory and Practice of Software Engineering, Distributed and Operating Systems, Secure Distributed Systems, Computer and Network Security, System Defense and Test, Applied Information Retrieval
- **Grading Assistant**, Theory and Practice of Software Engineering (Spring 2024) for a graduate-level class of **130+** students

National Institute of Technology, Tiruchirappalli — **Trichy, TN, India**

Bachelor of Technology with minor in Computer Science and Engineering — *Jul, 2016 - Jun, 2020*

- **CGPA**: 8.41/10.0
- **Relevant Coursework:** Database Management System, Computer Organization, Big Data Analytics, Neural Networks

EXPERIENCE

Railinc Corp. — **Cary, NC, USA**

Software Engineering Intern — *Jun, 2023 - Aug, 2023*

- Enhanced the dashboard application to effectively keep track of components on AWS using **Angular, Java, Spring, PostgreSQL**
- Added features to help establish, understand and visualize the relationship between internal products and their components

Citi — **Chennai, TN, India**

Software Engineer — *Aug, 2020 - Jul, 2022*

- Developed 2 internal functionalities as **Angular micro frontend** applications using **single-spa** to modularize features
- Achieved a **60% decrease** in latency and these applications are being used by customer service agents within Citi
- Increased the reusability factor of micro frontend applications by transitioning from single-spa framework to Module Federation
- Guided other teams with the development of micro frontends and made sure their applications followed business standards
- Received **Takes Ownership** and **Succeeds Together** awards for my work on this project

Citi — **Pune, MH, India**

Software Development Intern — *May, 2019 - Jul, 2019*

- Migrated a caching component from legacy software TIBCO BW to an event-driven architecture using **RxJava** and **Spring**
- Developed it as a standalone service with multi-threading to optimize performance by a factor of **1.5**

KEY PROJECTS

Stock Trading System — *Feb, 2023 - May, 2023*

- Developed a 3-tier stock trading server using **Python** which can handle requests from various clients using a thread-pool model
- Designed replication logic with bully leader election algorithm and maintained consistency between replicas even after failure
- Implemented LRU cache at the top level and achieved a **20% decrease** in latency and also handled leader failure through re-election

Stock Recommendation System | **Repository** — *Feb, 2023 - May, 2023*

- Developed a stock recommendation system using **Python** which analyzes historical data using **PySpark**
- Used LSTM, Random Forest, and Factorization Machine models from **SparkMLLib** and **PyTorch** to predict closing price for stocks

Elevation Navigation System - EleNa | **Frontend** | **Backend** — *Oct, 2022 - Dec, 2022*

- Built a navigation system using **React** and **JavaScript** to suggest the shortest path between 2 user defined locations
- Implemented Dijkstra's, A* and BFS algorithms to calculate shortest path and achieved best performance with the first two

Reinforcement Learning based control of ball-beam system | **Publication** — *Jan, 2020 - May, 2020*

- Developed a simulation environment of the servo based ball and beam system using **Python** and OpenAI gym
- Trained the system using PPO2 and DDPG algorithms with a maximum reward of **0.99** on a scale of 0 to 1

Student Cafeteria application | **Repository** — *Feb, 2020*

- Designed a mobile application using **React Native** for cafeteria management to keep track of schedule and feedback
- Implemented API endpoints, database schema using **Django**, and employed Holt-Winters forecasting for predicting food wastage

TECHNICAL SKILLS

Languages - Python, C++, Java, C, HTML, CSS, JavaScript, TypeScript, SQL

Tools/Technologies - Git, Jenkins, AWS, Gradle, JUnit, Pytest, Swagger, Postman, Docker, Maven, Apache Spark

Frameworks/Libraries - Angular, React, Bootstrap, Spring, single-spa, NumPy, Matplotlib, Tensorflow, Scikit-Learn, Keras