

Archana Ganesh

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EDUCATION

University of Massachusetts, Amherst

Master of Science in Computer Science

Amherst, MA, USA

Sep, 2022 - May, 2024

- **CGPA:** 3.84/4.0
- **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

Bachelor of Technology with minor in Computer Science and Engineering

Trichy, TN, India

Jul, 2016 - Jun, 2020

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

EXPERIENCE

Railinc Corp.

Software Engineering Intern

Cary, NC, USA

Jun, 2023 - Aug, 2023

- Enhanced a dashboard application using **Angular, HTML, CSS** and **Java** to track **AWS**-components' relationships and ownership
- Engineered the end-to-end logic to move a subset of related components while maintaining component type integrity
- Built filters using **PostgreSQL** to categorize components by service readiness and relationship with different component types

Citi

Software Engineer

Chennai, TN, India

Aug, 2020 - Jul, 2022

- Developed **Angular** micro frontends using **HTML, CSS, TypeScript**, and **single-spa**, streamlining feature modularization
- Received the **Takes Ownership** award for contributions to application development and reducing maintenance overhead
- Achieved a **60% decrease** in load time of applications that resulted in the adoption of the solution by the various teams
- Guided other teams with the development of micro frontends and made sure their applications followed business standards
- Implemented the pilot version of **App Dynamics** for end-user monitoring and received **Succeeds Together** award for the same

Citi

Software Development Intern

Pune, MH, India

May, 2019 - Jul, 2019

- Migrated a caching component from legacy software TIBCO BW to an event-driven **Java** architecture using **RxJava** and **Spring**
- Utilized multi-threading to optimize the performance and achieved a runtime performance improvement 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 for graceful failure handling
- Implemented LRU caching at the top level that resulted in a **20% decrease** in latency and handled leader failure through re-election

Stock Prediction 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 of stocks

Elevation Navigation System - EleNa | Frontend | Backend

Oct, 2022 - Dec, 2022

- Built a navigation system using **React** and **JavaScript** to suggest the path of minimum elevation gain between given locations
- Implemented Dijkstra's and A* algorithms to find the path within a user-specified range of the distance of the shortest path

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