Gagan Nagaraj

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EDUCATION

Master of Science. Computer Science **Expected Dec 2023**
Arizona State University, Tempe, AZ 3.78/4 CGPA
(Relevant Courses - Statistical Machine Learning, Knowledge Representation and Reasoning)

Bachelor of Technology. Information Technology **April 2022**
National Institute of Technology, Karnataka, Surathkal, India. 7.72/10 CGPA
(Relevant Courses - HCI, Computer Vision, Data Warehousing)

TECHNICAL SKILLS

Programming Languages: C/C++, Python, C#.
Databases and Frameworks: NoSQL, SQL, SQLite3, .NET, TensorFlow, Pytorch, Django, Flask.
Tools and OS: Docker, GIT, Xcode, macOS, Linux/UNIX, Jenkins.

PROFESSIONAL EXPERIENCE

Store Intelligence Inc, Pleasanton, U.S.A: Software Engineer Intern **April 2022 - August 2022**

- Collaborated to develop a C++ 11 multithreaded application with integration of SQLite3 running on Linux deployed on a Cortex-A53 SOM as an Edge Computing device named Access Point (AP) with primary function of binary protocol communication with FreeRTOS-based firmware. Refactored application to facilitate Domain Specific Language.
- Architected, Presented, and Programmed an accelerated communication protocol between Cortex-A53 SOM and FreeRTOS to increase pace of screen updates on BLE devices by 150%, saving more than 8 seconds per update.
- Reduced testing time and resources by more than three-fourths through implementation of a C#-based IoT Debug/Test application to replicate cloud functionalities, enabling simultaneous testing of multiple Access Points (APs) in an efficient and streamlined manner.
- Accomplished integration of a code-based store-agent login system with robust 256-bit AES encryption into a consumer-based IOS application, resulting in enhanced security and user experience.
- Improved debugging process for developers by creating a Python-based Log Parser to aggregate insights from logs.
- Managed and supported Continuous Integration for multiple projects, ensuring smooth software delivery using Jenkins.

eSamudaay, Bangalore, India: Software Engineer Intern **October 2021 - January 2022**

- Constructed innovative APIs for a decentralized commerce platform, enabling community to seamlessly add new features such as "Add an Item after order" and "Schedule order" using Python and Django.
- Architected an intuitive API system to allow users to build custom UIs with ease by leveraging item labels.
- Demonstrated exceptional problem-solving skills by swiftly identifying and fixing bugs in over 15 existing APIs, enhancing platform performance.
- Integrated numerous unit test cases using Pytest framework, leading to a notable improvement of 8% in overall coverage, elevating it to a level of greater than 93%.

Graphene AI, Bangalore, India: Machine Learning Engineer Intern **May 2021 - September 2021**

- Achieved a high level of accuracy in language detection and filtering by remodeling and deploying a model from Johnsnow Labs's Spark-NLP library with an F1-score of 0.927 to help with Sentiment Analysis..
- Optimized data extraction process by automating it with web scraping frameworks (Scrapy and Selenium) and transforming data for compatibility with pipeline stages.
- Improved data manipulation with development of data visualization tools using Python and Streamlit.
- Incorporated a CI/CD pipeline into codebase, streamlining development process and ensuring efficient and consistent delivery of updates.

RELEVANT PROJECTS

Similarity-Aware Channel pruning for Convolutional Neural Networks, Major Project, NITK **July 2021 - March 2022**

- Proposed a novel channel pruning method to accelerate and compress CNNs, allowing deployment on resource-constrained devices. The method compares similarity of a layer's output feature maps based on five criteria.

Ranking Relevance of Corpus, Course Project, NITK **July 2021 - November 2021**

- Led a team of 4 to develop a corpus relevance ranking model using Markov Decision Process algorithms and compared results with benchmarks on LETOR Dataset.

Parallel ChessAI, Course Project, NITK **January 2021 - April 2021**

- Worked on parallelizing a chess engine using OpenMP in C. Implemented the Min-Max algorithm with root splitting to optimize the engine's efficiency.

PUBLICATIONS

Paper: Interactive System for Toddlers using Doodle Recognition **December 2021**
9th International Conference on Pattern Recognition and Machine Intelligence. Organized by Machine Intelligence Unit, Indian Statistical Institute, Kolkata, India