Gagan Nagaraj

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EDUCATION

Master of Science. Computer Science (Specialization in Artificial Intelligence) **Expected May 2024**
Arizona State University, Tempe, AZ 3.87/4 CGPA
Bachelor of Technology. Information Technology **April 2022**
National Institute of Technology, Karnataka, Surathkal, India. 7.72/10 CGPA

TECHNICAL SKILLS

Programming Languages : C/C++, Python, C#.
Databases and Frameworks **:** PostgreSQL, SQLite3, Neo4j, .NET, TensorFlow, Pytorch, Django, SQLAlchemy, FastAPI.
Tools and OS : PuTTY, GIT, Jenkins, Infra, pgAdmin, macOS, Embedded Linux.

PROFESSIONAL EXPERIENCE

AdviNOW Medical, Scottsdale, AZ: ***Artificial Intelligence Engineer Intern*** **June 2023 - Present**

- Work in a team of 6 to enhance Treatment-Engine and deploy endpoints aimed at assisting doctors in providing potential treatment suggestions.
- Utilize AWS Comprehend to implement NLP techniques to identify and establish relationships between symptoms and CPT codes.
- Improvise Bayesian model driven Multi-lingual triage processes by cross-referencing patient inputs with a comprehensive illness database.
- Built a Dataframe compare system to facilitate quality migration from Neo4j to PostgreSQL driven backend.

Store Intelligence, Pleasanton, CA: ***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 OTA data transfer to 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 .NET based 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.
- 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 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 endpoints, 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 0.93 to pass reviews into "Sentiment Analysis" stage of pipeline.
- 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.

RELEVANT PROJECTS

Machine Learning Driven F1-Predictor, Course Project, ASU **Jan 2023 - April 2023**

- Project aims to utilize various data sources, such as driver and team statistics, historical race data, weather conditions, and circuit characteristics, to generate accurate predictions for the upcoming F1 races.

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.

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