

GAGAN NAGARAJ

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GitHub: github.com/gagankonana

Portfolio: gagankonana.github.io

TECHNICAL SKILLS

Programming/ Scripting : C++, Python.

Database : PostgreSQL, SQLite3, Neo4j, MongoDB.

OS : Linux, FreeRTOS.

Tools : Git, Jenkins, Argo CD, AWS, Datadog, Sentry, Yocto.

Frameworks : FastAPI, Django, Tensorflow, Pytorch, Selenium, Pytest, Celery, RabbitMQ.

EXPERIENCE

AdviNOW Medical | Software Engineer 1 | Scottsdale, AZ, USA

Jan 2024 - Present

- Led refactor of Electronic Medical Record integration project, utilizing **Django**, **PostgreSQL**, and **Celery** to shift from data dependency-based triggers to **RabbitMQ** event-based task triggers, for full workflow control.
- Re architected Rules Engine (**FastAPI** + **PostgreSQL** service) to support multiple language translations on scale.
- Enhance convergence criteria by 15% of **Bayesian theorem** based **Diagnostic Language model**.
- Implemented big data pipeline to predict and store relationships between illnesses and symptoms using **BioBERT** (fine tuned on proprietary symptom-illness corpus) into **MongoDB** and import schematic data into **Neo4j**.

AdviNOW Medical | Software Engineer Intern | Scottsdale, AZ, USA

June 2023 - December 2023

- Built **FastAPI** service to generate and render History of Present Illness with **mako template** into Doctor App.
- Optimized set of **Django** services by implementing **multithreading**, minimizing **PostgreSQL** queries and redefining **cache** structure, resulting in a performance boost of over 55% for each endpoint.
- Conducted documentation and troubleshooting of slow/buggy services using **Datadog** and **Sentry**.

Agile-Displays (Store Intelligence) | Software Engineer Intern | Pleasanton, CA, USA

April 2022 - August 2022

- Collaborated on **C++11** multithreaded application, cross-compiled with **Yocto** and running on **Linux** (deployed on **Cortex-A53**), with a primary focus on binary protocol communication.
- Added legacy systems cloud support functionality on **Java**-based translator application to support cloud requests on legacy systems (translating cloud requests into protocols understood by legacy applications).
- Integrated **SQLite3** with C++ to move device specific cloud data onto edge devices, reducing boot latency by 10%.
- Debugged Memory fragmentation of C++ application using **Valgrind** and **Bash** scripts (to track RSS and VSZ).
- Implemented workflow **priority queuing** algorithm on device timeslot to optimize **thread** allocation by 30%.
- Modeled **Domain Specific Language** support for **C++** app to enable custom flows to help QA team experiment.
- Programmed accelerated **Cortex-A53 - M4** communication protocol, cutting 75% **Radio Frequency** cycle wastage.
- Built a Test application for Windows in **C#** to replicate Vantiq cloud application to automate testing.
- Supported Continuous Integration for 2 projects using **Jenkins**.

eSamudaay | Software Engineer Intern | Bengaluru, KA, India

October 2021 - February 2022

- Constructed REST APIs for decentralized commerce platform using **Django** and **postgreSQL** integrated with **Redis**.
- Identified and fixed bugs in over 15 endpoints through unit testing using **PyTest** resulting in 92% in test coverage.

Graphene AI | Software Engineer Intern | Bengaluru, KA, India

May 2021 - September 2021

- Remodeled language classifier using **TensorFlow** to filter e-comm reviews scraped using **Scrapy** and **Selenium**.
- Built Dashboards using **Python** and **Streamlit** for QA team to validate data.

EDUCATION

Master's, Computer Science

Arizona State University

August 2022 - May 2024

GPA: 3.93

Bachelor's, Computer and Information Science

National Institute of Technology, Karnataka

August 2018 - May 2022

GPA: 7.72

PROJECT WORK

Similarity-Aware Channel pruning for Convolutional Neural Networks | Thesis | [Report](#)

July 2021 - March 2022

Proposed channel pruning method based on CNN's output feature maps similarity to accelerate and compress CNNs, allowing deployment of CNNs on resource-constrained devices for computer vision related tasks.