Anagha Naga Krishna

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EDUCATION

University of Southern California — Los Angeles, CA

Master of Science in Computer Science **GPA: 3.6/4** — ***Aug 2023 - May 2025***

Courses: DBMS, Algorithms, Web Technologies, Security Systems, Information Retrieval

TECHNICAL SKILLS

- Programming Languages: C, Python, JavaScript, Swift
- Databases: SQL, MySQL, MongoDB
- Web technologies and frameworks: HTML, CSS, TypeScript, Flask, FastAPI, Starlette, NodeJS, ReactJS, SwiftUI
- OS /Tools: Windows, Mac, Linux, Google Workspace, MSOffice, GitHub, GitLab, Docker, Kubernetes, OpenShift

PROFESSIONAL EXPERIENCE

Sandia National laboratories

Software Engineering R&D Intern — ***Sep 2024 - present***

- Working on a project that provides Computing as a Service (CaaS) APIs for job submission and execution on required clusters.
  - Integrated Bandit (a Python security linter) into the **CI/CD** pipeline on **GitLab**, detecting vulnerabilities before merging code and reducing security issues by 30%, enhancing overall code security.
  - Built Helm charts for the API and OpenAPI Specification deployments of CaaS which led to efficient process management.

Software Engineering R&D Summer Intern — ***May 2024 - Aug 2024***

- **Project 1**: Trace collection and analysis of tools that use Formal Methods for Proof Engineering with OpenTelemetry and Jaeger
  - Instrumented 5 sample programs and exported traces to Jaeger using **Python**, serializing OTLP JSON to Jaeger thrift format, aiding the Quantitative Evaluation & Evidence Curation (QE/EC) phase.
  - Wrote a technical paper about Observability in Software Systems and its intersections with Security and Usability for the CSRI Summer proceedings.
- **Project 2**: Internal workflow management web application
  - Created a Docker Compose file that spins up required **Docker** containers with one command, simplifying application control and saving over 90% of the time spent on individual container setup.
  - Built an API for fetching workflow results from **OpenShift** and returning them to the frontend using **FastAPI** and **Kubernetes** API, reducing data retrieval time by 50%.
  - Built an API for fetching a pre-signed URL from S3 and created a button on the UI for calling the API and downloading the S3 object, this simplified the process of retrieving S3 artifacts and reduced data retrieval time by 50%.

Infoblox

Software Engineer 1 — ***Apr 2022 - Jul 2023***

- Developed scripts to migrate data from Version 1 to **Jira** using Python and Jira APIs, enhancing engineers' productivity by over 40% and providing team leads with better reports for analysis.
- Validated the correctness and functionality of the BloxConnect User Interface, improving product quality, and automated test cases using **Python** and Selenium, reducing testing time by 50%.
- Created documentation and held training sessions for the NIOS engineering team, architects, and PMs on effectively utilizing Jira for Agile project management, thus enabling a smooth transition from Version 1 to Jira in the firm.

Software Engineer — ***Aug 2021 - Mar 2022***

- Automated the configuration of various features on Infoblox's product (NIOS) using **Python**, ensuring accurate data collection on BloxConnect and reducing execution time from 20 hours to 2 hours.
- Verified and examined the accuracy of all static and buffered data obtained from BloxConnect, maintaining data accuracy above 90%.

Software Engineer Intern — ***Jan 2021 - Jul 2021***

- Designed and developed the front-end using **HTML**, **CSS**, and **JavaScript**, and contributed to the back end of an internal web application using Django, enabling over 50 users to obtain customized commands for configuring Infoblox's NIOS on virtual machines.

ACADEMIC PROJECTS

Stock Search — ***Feb 2024 - May 2024***

Developed an application that provides stock information, trends, and related news articles when a ticker symbol is searched by the user. Created with HTML, CSS, JavaScript, and Flask, which is enhanced into a MERN app and further into an iOS app.

Tailor-made Teller — ***Dec 2020 - May 2021***

Created a file reader-cum-screen reader, which extracts text from files and converts it to speech, the text gets displayed on the screen in a dialogue box and the audio plays with text highlighting, in synchrony. It has been developed with ReactJS, NodeJS, Python, HTML, CSS, Bootstrap and APIs like Google Text-to-speech, OpenCV, PythonTesseract and PDFMiner.

Prediction of depression using tweets during COVID-19 lockdown — ***Aug 2020 - Sep 2020***

Conducted sentiment analysis on tweets published during the COVID-19 lockdown to predict the likelihood of depression using Python.

Simulation of k Nearest Neighbors (kNN) classifier — ***Feb 2020 - May 2020***

Made a simulation with OpenGL and C language for demonstrating the working of the kNN classifier, which is a popular classification algorithm used in Machine Learning. Won 1st place for this project at PROP 2020 held at RNSIT.