


RAMAKANTH AYALASOMAYAJULA

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EDUCATION

- **University of North Carolina at Charlotte, Charlotte, NC** Dec 2023
Master of Science, Computer Science
 - Fellowship: Claudia M Reynolds Graduate Fellowship 2023-24 based on academic standing and exemplary performance.
- **New Horizon College of Engineering, Bangalore, India** Jul 2020
Bachelor of Technology, Information Science GPA: 4/4

ACADEMIC COURSEWORK

Algorithm and Data Structures, Database Systems, Software System Design & Implementation, Computer Vision, Computer Communication & Network, Cloud Computing for Data Analysis, Object Oriented Programming, UI Design.

SKILLS

- Programming Languages:** Python, C++, Java, GoLang, Bash/Shell Scripting, HTML, CSS, JavaScript, PostgreSQL, MySQL, MongoDB, Hadoop (Big data), PHP
- Technologies:** Microservices, RESTful APIs, PySpark, React, AWS (EC2, Lambda, S3), Docker, Kubernetes, FastAPI, Redis, Kafka
- Tools and Platform:** Git/Gitlab, Linux, UNIX, Visual Studio Code (VS Code), MS Office, Jira
- Other Skills:** Research & Development, Communication Skills, Debugging, Problem-Solving, Collaborative teamwork

WORK EXPERIENCE

- **Graduate Teaching Assistant | University of North Carolina at Charlotte | Charlotte, NC** Aug 2023 - Present
 - Collaborated directly with over **120 Graduate and PhD students** in the Software System Design & Implementation course, playing an instrumental role in both guiding and passionately participating in the development of **academic projects**.
 - Leveraged and shared expertise in key technologies such as **Golang, Python, JavaScript**, and **MongoDB**.
- **Graduate Research Assistant | University of North Carolina at Charlotte | Charlotte, NC** Aug 2022 – Dec 2022
 - Spearheaded development of a **dynamic web application with React**, offering intuitive real-time visualizations of **college athletic data**, empowering coaches, and analysts with upgraded decision-making tools.
 - Designed and implemented a solid **backend infrastructure in Python**, coupled with a **MySQL database**, ensuring seamless data handling and reliability.
 - Cooperated closely with faculty and coaching staff to align the software platform with the **baseball team’s needs**, subsequently automating data workflows and bolstering strategic game planning through **actionable insights**.
- **Full Stack Software Engineer | Hughes Systique Corporation | Bangalore, India** Jan 2020 – Jul 2022
 - Led the development of a **SaaS platform** for high-level **cloud security and compliance**; executed the design and optimization of **RESTful APIs** using **Flask** and **Python**, achieving an **80% reduction** in API response time.
 - Developed and tested **user-friendly dashboards** for the platform using **React** and **Jest**, enhancing interface interaction and simplifying access to key functionalities.
 - Enhanced database efficiency by refining complex **MongoDB queries** with **aggregation pipelines** and **indexing**, leading to a **25% reduction** in long-running queries.
 - Implemented **Python automation scripts** for client reports on cloud account usage and compliance, reducing manual data processing by **40%** and saving **\$50k annually** in operational costs.
 - Designed and tested APIs using **Pytest**, incorporated **Redis** for efficient caching to ensure prompt results, and employed **Kafka** for robust **data streaming**, augmenting the product’s functionality and performance.
 - Authored **Docker files** and generated **docker images** for microservices, subsequently collaborating with the **DevOps team** to facilitate smoother deployment processes.
 - Executed strategic refactoring of **legacy code**, bolstering system stability and maintainability. Enforced **Role-Based Access Control (RBAC)** functionality, fortifying system security.
 - Developed automation scripts for **task scheduling** and data manipulation, integrating **Python** and **CronJobs**, which reduced manual tasks by **60%** and significantly improved workflow efficiency.
- **Software Developer | PlugXR | Bangalore, India** Jun 2019 – Dec 2019
 - Collaborated with the development team on a **retail-business web application**, contributing as a **Python developer** with a focus on using **Flask** and **Django frameworks** to enhance application functionality and user experience.
 - Actively engaged in the **API** and **Agile Software Development Life Cycle**, applying best practices to enhance **backend infrastructure** and **code quality**.
 - Played a supporting role in optimizing **MongoDB queries** and contributed to the design and deployment of an **audit log system**, focusing on detailed **CRUD operations logging** for **data traceability** and **platform accountability**.

PROJECTS

- **FastAPI Social Media Platform with CI/CD & Security Enhancements**
 - Architected and delivered a **social media application** utilizing **FastAPI**, facilitating user interactions, content creation, and secure authentication. Mastered advanced features like **JWT authentication**, database relationships, and **API testing** via **pytest**. Incorporated **OAuth** for heightened security, ensuring users a seamless and secure experience.
 - Leveraged **PostgreSQL** in conjunction with **SQLAlchemy** for high-performance database operations. Employed **Docker** for streamlined deployments on **AWS EC2**, achieving a **40% bug reduction**. Strengthened application security employing **SSL/HTTPS**, **UFW firewall**, and **nginx**. Implemented a robust **CI/CD pipeline** with **GitHub Actions**, ensuring timely and safe updates to the production environment.
- **Traffic Density Management using Movable Divider and RFID**
 - Engineered a software solution applying **RFID technology** and real-time data processing algorithms to dynamically optimize traffic lanes, notably increasing emergency vehicle response times and overall traffic flow.
 - Co-authored a **research paper** detailing the project’s innovative approach: **Traffic Density Management** using **Movable Divider and RFID**.

CERTIFICATIONS

- **AWS Certified Developer | Associate, Amazon Web Services** Sep 2023
- **AWS Academy Graduate | AWS Academy Cloud Foundations** Sep 2023
- **Programming, Data Structures & Algorithms | Python, NPTEL** Spring 2019
- **Programming, Data Structures & Algorithms | C, NPTEL** Spring 2018

LEADERSHIP

- **Vice President of i-SWET (Student Tech organization)**
 - Initiated educational strategies, propelling skill development and unifying students through collaborative ventures.
 - Masterminded ”Tesseract 1.0: Escape Room” event, crafting inventive technical challenges that enthralled over 150 participants across immersive sessions.