Mukul Chandrakant Mahadik

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Education

Arizona State University — **Tempe, Arizona**
Masters in Computer Science | **GPA: 3.90 / 4.0** — **08/2022 − 05/2024**
Software Courses (Requirements; Design; Verification, Validation, Testing), Data Processing at Scale, Cloud Computing

National Institute of Technology Hamirpur — **Hamirpur (H.P.) , India**
Bachelors in Electronics and Communication | **GPA: 8.73 / 10** — **08/2017 − 05/2021**

Technical Skills

Languages: Java, C++, Python, PL/SQL, HTML, CSS, JavaScript, TypeScript, XML, C#
Frameworks: Flask, Spring Boot, Node.js, Express.js, React.js, Elasticsearch, Algolia, JaCoCo, Jenkins, GitHub Actions
Databases: Oracle SQL, PostgreSQL, MongoDB, AWS DynamoDB, NoSQL
Architectures: REST API, Microservices
Cloud Platforms: OpenStack, AWS Cloud Services (EC2, S3, SQS, Lambda, Cloudwatch, ECR), Kubernetes
Developer Tools: Git, Linux, Bash, VSCode, IntelliJ, Docker, Taiga, Postman, Documentation, Agile, SDLC, TDD

Experience

National Renewable Energy Laboratory (NREL) — **Golden, Colorado**
Software Development Intern | *Python, Docker, MongoDB, Git, AWS (ECR, Cloudwatch, Inspector)* — **08/2023 − 05/2024**
- Refined data processing in model build and analysis pipeline in a distributed system for transforming raw data to inferred values followed by end-to-end manual and automated unit testing and integration tests.
- Did scaling and performance optimization to address scalability requirements by optimizing time complexity.
- Diagnosed and remedied model build pipeline failures in staging and production environments using Cloudwatch logs.
- Automated deployment DevOps process by restructuring CI/CD workflows using GitHub Actions.

Oracle Financial Services Software — **Bangalore, India**
Associate Technical Consultant | *PL/SQL, XML, Oracle DB, Oracle OFSAA, WinSCP, ETL* — **07/2021 − 05/2022**
- Implemented OFSAA LLFP fintech solutions in SIT, UAT and provided post-implementation support in Production environments for 2 international financial banking firms.
- Engineered 6 GUI based workflow runs for ETL pipelines with numerous tasks and integrated them with backend scripts to process data from Pre-staging to end-user report generation stage.
- Enhanced UI for Individual Assessment (IA) module based on XML Forms Framework by customizing 4 UI Forms and 8 PL/SQL scripts to process over 300k customer records by proposing to debug existing legacy code.
- Generated PL/SQL scripts for data manipulation and validation to automate manual tasks for filtering source data that helped reduce execution times by 20% while generating end-user reports containing customer data for over 6 months.
- Documented technical designs and deployed code packages across environments via WinSCP/PuTTY client-server apps.

Projects

Headless CMS Web App | *Java, Spring Boot, MongoDB* — **06/2023 − 06/2023**
- Architected backend infrastructure using Spring Boot, facilitating REST HTTP routes for seamless functionality.
- Utilized MongoDB for efficient CRUD operations - data storage, retrieval, modification, in a NoSQL document DB.

Sensor Data Visualization Web App | *Docker, PostgreSQL, HTML, CSS, JavaScript* — **05/2023 − 05/2023**
- Utilized Python Plotly library, hosted in Docker containers for local staging of PostgreSQL database.
- Enforced PEP8 standards, enhancing code readability, while integrating GUI for selective data backups.

Cloud-based Video Face Recognition App | *AWS, Python, Flask, Docker, OpenStack* — **02/2023 − 04/2023**
- Designed a 3-tier hybrid cloud architecture leveraging AWS and OpenStack for Web, App, and Data tiers integration.
- Prepared Python scripts for: Lambda triggers, S3, DynamoDB; auto-scaled 20 EC2 instances via SQS and Cloudwatch.

UML Diagram Generator GUI | *Java, Astah UML* — **11/2022 − 12/2022**
- Implemented 5 software design patterns to ensure reusability, scalability, maintainability within the GUI-based app.
- Based repository on Model-View-Controller (MVC) and Blackboard architecture principles for efficient development.

Extracurriculars

School of Computing & Augmented Intelligence | *Graduate Services Assistant* — **01/2023 − 05/2023**
- Grader for CSE 536 Advanced Operating Systems (Spring 2023) for SCAI at Arizona State University
- Activities: Preparing and reviewing coursework, Assisting students during office hours, Grading assignments.