



# Mukul Chandrakant Mahadik

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## Work Experience

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**National Renewable Energy Laboratory (NREL)** **Golden, Colorado**  
Software Development Engineer | *Python, Docker, MongoDB, Git, AWS (ECR, Cloudwatch, Inspector)* **08/2023 – 09/2024**

- Refined data processing in model build and analysis pipeline, transforming raw data into inferred values with comprehensive automated unit and integration testing.
- Optimized system scalability through time complexity improvements, enhancing overall performance.
- Troubleshoot and resolved model build pipeline failures in staging and production environments using CloudWatch logs.
- Streamlined and automated DevOps processes by restructuring CI/CD workflows with GitHub Actions.
- Implementing data export/import functionality for timeseries data purge and restore, improving database efficiency and data lifecycle management.

**Oracle Financial Services Software** **Bangalore, India**  
Software Development Engineer | *PL/SQL, XML, Oracle DB, Oracle OFSAA, 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.

## Technical Skills

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**Languages:** Python, C++, Java, HTML, CSS, JavaScript, TypeScript, PL/SQL, Go

**Frameworks:** REST API, GraphQL, Node.js, Express, React, Next.js, Flask

**Databases:** PostgreSQL, MongoDB, Oracle DB, AWS DynamoDB, Supabase, Prisma

**Generative AI:** Anthropic, OpenAI, Groq, Streamlit, LangChain, MultiOn, RAG Chain, LLMs, Deepgram

**Cloud Platforms:** OpenStack, AWS Cloud Services (EC2, S3, SQS, Lambda, Cloudwatch, ECR, RDS, Amplify)

**DevOps:** Docker, GitHub, GitHub Actions

**Developer Tools:** Git, Linux, Bash, VSCode, Postman, Figma, Documentation, Agile

## Projects

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**Classic To-Do List** | *React, Go, GraphQL, AWS (EC2, Amplify, RDS), PostgreSQL* **08/2024 – 08/2024**

- Developed a full-stack task manager webapp with CRUD operations using React and Go with PostgreSQL database.
- Implemented GraphQL API for efficient data retrieval; deployed on AWS with self-signed SSL certificate for HTTPS.

**Hackernews Clone Web App** | *React, GraphQL, Apollo Server, Apollo Client, Prisma* **08/2024 – 08/2024**

- Built Hackernews clone with link management, search, auth, and real-time updates using React and GraphQL stack.
- Implemented full-stack app with efficient data handling using Apollo Client/Server and Prisma for database operations.

**Voice AI Interviewer Agent** | *TypeScript, NextJS, Vapi, Supabase, Groq, GenAI, ShadCN UI* **07/2024 – 07/2024**

- Engineered an AI-powered voice interviewer, leveraging Groq for fast inference and Vapi for voice interactions.
- Implemented evaluation system with custom metrics, utilizing Supabase for authentication and storage.

**Product Data Catalog Web App** | *React.js, Next.js, Express.js, PostgreSQL, Node.js, TypeScript* **06/2024 – 06/2024**

- Developed a full-stack web app using Next.js and Express.js, implementing CRUD operations with user authentication.
- Leveraged TypeScript for development and Vercel and Heroku for deployment for reliability, maintainability, scalability.

**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.

## Education

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**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**

## Extracurriculars

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**AICamp Generative AI Hackathon for AI Agent and RAG** | *Overall Winner* **06/2024 – 06/2024**

- Won the AWS for Startups prize for creating a multimodal AI assistant that automates browser tasks on behalf of users.

**Coding Experiences: Debugging Made Easier** | *Blog Website* **10/2021 – 06/2024**

- Maintaining blog with posts - "Adding Local Directory to GitHub Repository" and "Renaming Multiple Files At Once".