

SAHIL BODKE

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EDUCATION

Northeastern University (Khoury College of Computer Sciences), Boston, MA
Master of Science in Robotics (Concentration: Computer Science)
National Institute of Technology Silchar, Assam, India
Bachelor of Technology – Mechanical Engineering

Sept 2022 – Dec 2024
GPA 3.96/4.0
July 2018 – May 2022
GPA 8.98/10.0

TECHNICAL SKILLS

Programming Languages: Python, R, C++, JavaScript, Java, MATLAB, Groovy
Cloud & DevOps: Azure, AWS (EC2, Lambda, S3, Batch, Sagemaker, Bedrock, Fargate, ECS, EFS, FSX, EBS, ECR, Load Balancer), Serverless, Docker, GitHub, GitHub Actions, GitLab, CI/CD, NGINX, Linux
Frameworks & libraries: PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, Nextflow, Dash, Figma
Web Technologies: FastAPI, React, Node.js, Express.js, Mongoose, REST API, HTML, CSS, Bootstrap
Databases: MySQL, MongoDB, PostgreSQL, Athena, RDS, DynamoDB, DuckDB
Tools: Git, Tableau, ROS, VS Code, Postman

EXPERIENCE

Ampersand Biomedicines, Boston, USA (Machine Learning Engineer Co-op)

Feb 2025 – Present

- Engineered and deployed **scalable Generative AI models** within **AWS infrastructure**, optimizing resource utilization and ensuring secure, efficient operations for processing antibody sequences and analyzing protein docking results
- Automated model deployment and endpoint configuration using Python and **Boto3**, reducing setup time by **30%**
- Implemented **high-throughput AWS Batch pipelines** to accelerate computational processes, reducing computation times by **40%** and enhancing overall system efficiency
- Developed a gene expression analysis pipeline using **Dask** for **distributed computing**, reducing memory usage by **50%** through optimized data handling in **Parquet** format

Ampersand Biomedicines, Boston, USA (AI/Data Engineering Co-op)

Jan 2024 - Aug 2024

- Architected single-cell RNA seq pipelines using **Nextflow**, **Docker**, orchestrated via AWS, **EC2**, **S3**, **FSX** and **Lambda** enabling efficient processing of large biological datasets
- Automated execution workflows using AWS Lambda and EC2 launch templates, cutting processing costs by **50%**
- Developed **high-throughput workflows with AWS Batch**, achieving a **30% reduction in processing times** by optimizing infrastructure with pre-installed dependencies (e.g., Rosetta) on FSx and EFS
- Developed interactive dashboards using **Tableau** and **Dash** to visualize gene expression and QSP modeling data, to facilitate enhanced data-driven decision-making

PROJECTS

API Development Using Python (FastAPI, PostgreSQL, Docker, NGINX, JWT, GitHub Actions, Ubuntu)

July 2023

- Designed and implemented a secure **API** for user-generated content sharing using **FastAPI**, integrating **PostgreSQL** for persistent data management
- Implemented **JWT**-based authentication to secure API endpoints and manage user sessions
- Containerized** the application and its database service using **Docker** for streamlined portability and consistent deployment environments
- Configured **NGINX** as a reverse proxy on Ubuntu server for optimized request handling and **SSL termination**, securing the server with UFW firewall
- Established a robust **CI/CD pipeline using GitHub Actions** to automate testing suite and deployment process, enabling continuous delivery

Food Delivery App using MERN Stack (MongoDB Atlas, Express.js, React, Node.js, JavaScript, JWT)

May 2023

- Designed and developed a **full-stack** food delivery **web application** using the MERN stack to provide secure and interactive food ordering experience
- Built an intuitive frontend with **React** and **Bootstrap**, and robust backend using **Node.js** and **Express.js** connected to **MongoDB Atlas**
- Implemented strong security measures, including bcrypt.js for user credential encryption and JWT for user authentication, ensuring data integrity and user privacy in the developed platform

ACHIEVEMENTS & CONTRIBUTIONS

- A Fish Robot: It's Modeling and Pose Estimation: Presented at the [2021 International Symposium of Asian Control Association on Intelligent Robotics and Industrial Automation \(IRIA\)](#)
- Teaching Assistant** for 'Programming with Data' course for **2 semesters** assisting students with assignments and labs
- Recipient of '**Assistance to Meritorious Students Scholarship – Junior Level**' for outstanding academic performance

COURSES & CERTIFICATIONS

AWS – AI Practitioner | Algorithms | Neural Networks and Deep Learning | Natural Language Processing | Pattern Recognition and Computer Vision | Human Computer Interaction