

# 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), Serverless, Docker, GitHub, GitHub Actions, GitLab, CI/CD, NGINX, Linux  
**Frameworks & libraries:** PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, Nextflow, Dash, Figma  
**Web Technologies:** FastAPI, **Svelte**, React, Node.js, Express.js, Mongoose, REST API, HTML, CSS, Bootstrap, TypeScript  
**Databases:** MySQL, MongoDB, PostgreSQL, Athena, RDS, DynamoDB, DuckDB  
**AI & Other Tools:** **MCP, Claude Code, Cursor, Windsurf, Kiro**, Git, Tableau, VS Code, Postman, ROS

## EXPERIENCE

**UniBio Intelligence, USA** (Software Engineer) **July 2025 – Present**

- Worked on a microservices-based biologics platform using **Python (FastAPI)** and **10+** independent services on Azure, enabling researchers to execute AI-powered computational workflows through stable, containerized APIs
- Designed a **PostgreSQL-backed** asynchronous job persistence system, implementing explicit job state transitions, historical traceability, and deterministic recovery behavior for interrupted executions
- Added **Model Context Protocol (MCP)** support to existing OpenAPI services using parallel execution paths for safe, incremental adoption; implemented stateless MCP services with **JWT**-based identity propagation across distributed systems
- Deployed and operated MCP servers on **Azure Container Apps** via **CI/CD** pipelines, and integrated MCP tooling into a production chat application to enable **dynamic tool calling**, structured outputs, and **multi-tool AI agent** workflows, while improving build reproducibility and environment parity

**Ampersand Biomedicines, Boston, USA** (Machine Learning Engineer Co-op) **Feb 2025 – July 2025**

- Productionized ML inference services on AWS by automating endpoint provisioning and deployment workflows using Python and infrastructure APIs
- Designed a **distributed AWS Batch pipeline** to parallelize large workloads, reducing end-to-end job execution time by **40%**
- Collaborated with research teams to transition experimental code into **maintainable, monitored production services**

**Ampersand Biomedicines, Boston, USA** (AI/Data Engineering Co-op) **Jan 2024 - Aug 2024**

- Architected **cloud-native data pipelines** using Docker, serverless compute, and workflow orchestration, reducing operational cost by **50%**
- Built distributed data processing jobs to handle large datasets efficiently, optimizing memory usage and execution time
- Delivered internal Tableau dashboards enabling non-engineering users to explore and analyze results independently

## PROJECTS

**API Development Using Python** (FastAPI, PostgreSQL, Docker, NGINX, JWT, GitHub Actions, Ubuntu) **July 2023**

- Designed and implemented a **production-style REST API** using FastAPI and PostgreSQL, supporting authenticated user-generated content with JWT-based security
- Containerized services with Docker, configured **NGINX as a reverse proxy**, and implemented a **CI/CD pipeline using GitHub Actions** to automate testing and deployment

**Food Delivery App using MERN Stack** (MongoDB Atlas, Express.js, React, Node.js, JavaScript, JWT) **May 2023**

- Built a **full-stack MERN application** enabling user authentication, order management, and secure data persistence using MongoDB Atlas
- Implemented **bcrypt-based credential hashing and JWT authentication**, ensuring secure session management and user data protection

## ACHIEVEMENTS & CONTRIBUTIONS

- Co-authored and presented research on **A Fish Robot: It's Modeling and Pose Estimation** at: Presented at the [2021 International Symposium of Asian Control Association on Intelligent Robotics and Industrial Automation \(IRIA\)](#)
- Teaching Assistant** for **Programming with Data** course assisting students with assignments and labs across **2 semesters**
- 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