Mahimul Islam

Full Stack Engineer

MS in Computer Science, Georgia Institute of Technology

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Links: LinkedIn | Portfolio | GitHub

Experience

Full Stack Software Engineer, Maeknit, Inc – Jamaica, NY Mar 2025 – Present

- **Sole software engineer** leading full-cycle development in two-week Agile sprints, collaborating directly with the CTO and CEO via **Jira** and **Slack**.
- **Built the company's end-to-end business workflow** in Odoo, enabling a seamless progression from Website Lead Generation through CRM Pipeline, Sales Orders, R&D, Manufacturing Shopfloor, and Delivery.
- **Designed custom stages, views, and automation rules** across CRM, Sales, Inventory, Project, and MRP to eliminate manual handoffs and standardize garment production processes using **Python, OWL, JavaScript, XML**.
- **Developed a full MFG shopfloor interface** using OWL with integrated instructions, CADs, attachments, progress tracking, and operation-specific logic.
- **Created and maintained 7+ custom Odoo modules** tailored to fashion manufacturing, including BOM management, yarn orchestration, variant handling, machine settings, and technical documentation.
- **Integrated Excalidraw into Odoo's R&D pipeline**, enabling sketching, CAD data storage, and technical documentation directly in BOM Requests and Work Orders.
- **Built and launched** the public-facing website using **React.js, Next.js, HTML, CSS**, delivering a fully responsive branded experience.
- **Architected and built a financial modeling dashboard** for margin planning, capacity simulation, and sensitivity analysis using **React.js, Next.js, HTML, CSS**.
- **Developing an internal AI chatbot** using **Python** and NLP models for quoting, onboarding, and knowledgebase access.
- **Building a factory marketplace platform** with a **React.js frontend** and **Python backend** integrated with Odoo modules to enable rapid quoting system.
- Daily responsibilities: 80% hands-on coding and 20% planning/testing using **Python, OWL, JavaScript, React.js, XML, PostgreSQL**.
- Technologies: **Python, OWL, JavaScript, XML, React.js, Next.js, HTML, CSS, PostgreSQL, Odoo.sh, AWS, Jira, Slack**.

Full Stack Engineer, Genome Medical Inc – South San Francisco, CA Aug 2022 – Jan 2025

- **Architected and deployed** scalable **cloud-based** web and backend systems using **AWS (EC2, S3, RDS)** and **Docker**, using open-source technologies like **Flask, Node.js, and PostgreSQL**.
- Ensured **100% on-time delivery** of key product releases while maintaining **high availability** and **operational support** for mission-critical healthcare applications.
- **Led the design and implementation** of a seamless **patient migration solution** between **Genome Medical** and **GeneMatters**, integrating **secure API development** (**Node.js, Python**) with a **React.js + Redux-powered one-click UI**. This solution **automated large-scale data transfers**, eliminating **manual intervention** and ensuring **100% secure migration** of critical patient records.
- **Collaborated on enhancing and maintaining** a **Vue.js**-based Admin Portal, troubleshooting issues, resolving tickets, and optimizing workflows to help administrators efficiently manage **partner and provider information**, **streamline onboarding**, and improve operational efficiency.
- **Strengthened** platform security by proactively identifying and resolving over 50 critical vulnerabilities using tools like **Aikido & Sentry**, a 30% improvement in system resilience and a reduction in reported security incidents.

- Designed, implemented, and maintained **CI/CD pipelines** using tools such as **GitLab CI/CD and Bitbucket pipelines**, automating the build, test, and deployment processes, resulting in a 20% acceleration in release cycles and ensuring consistent delivery of high-quality software.
- **Collaborated cross-functionally** with senior engineers, product managers, and designers to develop user-centric **React.js and Vue.js** features, contributing to the successful launch of initiatives that **streamlined clinical workflows and improved operational efficiency.**
- **Built and executed automated testing frameworks** (unit, integration, and system testing) with Mocha, Jest, Selenium, and Cypress. This initiative resulted in a **40% reduction in production bugs, 15% acceleration in release cycles**, and significantly reduced the need for **hotfixes**, enhancing overall system **stability**.
- **Played a key role in agile sprints,** contributing to **planning, refinement, and retrospectives** to enhance **team productivity**, utilizing **Jira** for sprint management and **Confluence** for documentation.
- Provided timely **production support**, resolving over **150 support tickets** within 6 months, ensuring continuous operational reliability and minimizing system downtime.
- Technologies: **React.js, Vue.js, TypeScript, JavaScript, Python, Flask, Node.js, Mocha, Jest, Selenium, Cypress, AWS, Docker, Postgres SQL, Redux**

Software Developer (Part-time) , Cardinal Selling Services Jul 2014 – Jan 2021, Feb 2022 – Aug 2022
Huntingburg, IN

- Developed **websites and web services** using **REST-based web services** and tools including **HTML, CSS, Bootstrap, JavaScript, and Django**.
- Conducted **user requirement analysis** and designed the **Entity Relationship Diagram (ERD)**.
- Conducted **integration and unit testing** using automated testing frameworks including **Mocha, Jest, Selenium, and Cypress**.
- Improved **product scraping systems** using **Python** and its libraries.
- Implemented **automation** to streamline manual processes, resulting in cost savings for the company.
- Provided support for **email marketing initiatives**.
- Used **Linux / command line** and modern software development practices (**git, pull-requests, Jira**) to advance software projects.
- Worked with **relational database design**, **SQL**, and **PostgreSQL**.
- Built **high-scale APIs** that operate on **AWS**, using tools including **React.js, TypeScript, Node.js, and Docker**.

Education

Georgia Institute of Technology, Master of Science in Computer Science Jan 2024 – Dec 2025

- GPA: 3.7/4.0
- **Specialization:** Interactive Intelligence

Ahsanullah University of Science & Tech, BS in Computer Science & Engineering Nov 2015 - Feb 2020

- GPA: 3.43/4.0

Publications

Hybrid Text Summarizer for Bangla Documents Nov 2020

Int. Journal of Computer Vision and Signal Processing (IJCVSP), Vol 10, No. 1

- First Author.
- Topic: Natural Language Processing, Text Summarization & Machine Learning.

Adaptable Social AI Agents May 2025

ToM4AI Workshop at AAAI 2025, pp. 26

- Workshop paper presenting episodic self-explanation capabilities for SAMI.

Correcting LLM Errors: A Metacognitive Architecture for ToM Adaptation in AI Agents Nov 2025

ToM4AI Workshop at AAAI 2026

- Published workshop paper presenting a metacognitive ToM adaptation framework that integrates KBAI and GenAI for self-revision in social AI agents.
- Evaluated on real-world student feedback from a deployed AI social agent, achieving a 75% successful adaptation rate across 20 cases.

A Metacognitive Architecture for Correcting LLM Errors in AI Agents 2026 (In Press)

IAAI-26: Emerging Applications of AI

- Introduced a two-level metacognitive architecture that localizes LLM-induced errors during entity extraction, matchmaking, and response generation.
- Developed a TMK-based self-model enabling the agent to introspect on its own pipeline and identify the source of misinterpretation or hallucination errors.
- Implemented an integrated KBAI–LLM approach combining symbolic reasoning (TMK, knowledge graph, solution library) with generative models (ChatGPT) for adaptation.

Active Projects

SAMI (Social Agent Mediated Interactions) | Design Intelligence Lab Aug 2024 – Present

- Contributing to the development of **SAMI**, an AI social agent deployed in Georgia Tech's OMSCS program for ten semesters and serving over 11,000 students, helping them build social connections through shared interests and identity markers.
- **Key Contributions:**
  - Co-designed and implemented SAMI's **two-level metacognitive self-adaptation architecture**, integrating Knowledge-Based AI with LLMs to correct ChatGPT-induced errors and improve interpretability.
  - Integrated the **Task–Method–Knowledge (TMK)** self-model to enable the agent to introspect on Level 1 reasoning and localize where hallucination, omission, misinterpretation, or user-initiated updates occurred.
  - Developed pipelines that combine **Neo4j knowledge graphs, ChatGPT-based entity extraction**, and a **solution library** for automated knowledge updates.
  - Built transparent, step-by-step revision messages that communicate the system's adaptation process, improving user trust and perceived intelligence.
  - Collaborated with the research team to prepare **real-world deployment** of the architecture in Spring 2026 for the OMSCS Knowledge-Based AI course (500+ students per semester).
- Technologies: **Python, Neo4j, LangChain, OpenAI (LLMs), Docker, AWS**.

Certification

Python for Everybody (Specialization with 5 Individual courses) | University of Michigan 2020

Deep Learning (Specialization with 5 Individual courses) | DeepLearning.ai 2020

Deep Learning (Specialization with 5 Individual courses) | John Hopkins University 2020

Natural Language Processing with Classification and Vector Spaces | DeepLearning.ai 2020