

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

- **Architected a B2B Manufacturing Marketplace** using **Next.js** and **PostgreSQL (Amazon RDS)**, deployed on **AWS ECS with Fargate** for serverless container orchestration.
- **Engineered an AI-driven Onboarding Suite** that summarizes client meetings and generates automated project proposals, streamlining communication via **SendGrid** and an AI-powered "project chatter."
- **Developed a Factory Quotation System** allowing admins to broadcast requirements to vendors and receive live, competitive quotes based on **baseline manufacturing standards**.
- **Designed a Seamless Odoo-to-Portal Bridge**, routing marketplace orders into an ERP pipeline covering CRM, Sales, R&D, and **Manufacturing (MRP)** for end-to-end traceability.
- **Sole Software Engineer** owning end-to-end execution, scaling the platform to secure a **\$3M venture investment** while managing two-week Agile sprints with the CTO and CEO.
- **Built 7+ Custom Odoo Modules** using **Python, OWL, and JavaScript** to automate fashion-specific logic, including yarn orchestration and BOM management.
- **Architected a Financial Modeling Dashboard** for margin planning and capacity simulation, improving executive decision-making speed.
- **Technologies:** Python, OWL, JavaScript/TypeScript, Next.js, React.js, AWS (ECS, Fargate, RDS), PostgreSQL, Docker, SendGrid API, Excalidraw, AI Agents.

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

- **Delivered mission-critical healthcare systems** with **100% on-time releases**, maintaining high availability for regulated clinical platforms.
- **Enabled secure patient data migration** between Genome Medical and GeneMatters, ensuring **HIPAA compliance** and zero data loss.
- **Improved platform security** by resolving **50+ critical vulnerabilities**, resulting in a 30% increase in system robustness.
- **Accelerated product delivery velocity** through **CI/CD automation**, reducing release cycles by 20%.
- **Architected cloud-based backend systems** using **AWS (EC2, S3, RDS)** and **Docker**, leveraging Flask, Node.js, and PostgreSQL.
- **Designed a patient migration platform** using secure APIs and a **React.js + Redux** one-click UI to automate data transfers.
- **Built automated testing frameworks** using **Mocha, Jest, Selenium, and Cypress**, reducing production bugs by 40%.
- **Provided production support at scale**, resolving **150+ support tickets** within six months while maintaining system stability.
- **Technologies:** React.js, Vue.js, TypeScript, Python (Flask), Node.js, GitLab CI/CD, Bitbucket Pipelines, AWS, Docker, PostgreSQL.

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

- **Developed web services** using **REST APIs, HTML, CSS, Bootstrap, and Django**.
- **Architected high-scale APIs** deployed on **AWS**, leveraging **Node.js, TypeScript, and Docker** for high-concurrency traffic.

- **Optimized product scraping engines** using **Python**, significantly increasing data ingestion rates and accuracy.
- **Engineered automated test suites** using **Jest and Selenium**, reducing regression bugs and increasing deployment velocity.
- **Led ERD design and schema optimization** for **PostgreSQL** databases, ensuring query performance for complex datasets.
- **Automated manual processes**, reducing operational overhead and driving **measurable cost savings**.

Education

Georgia Institute of Technology , Master of Science in Computer Science	Jan 2024 – Dec 2025
<ul style="list-style-type: none"> • GPA: 3.7/4.0 • Specialization: Interactive Intelligence 	
Ahsanullah University of Science & Tech , BS in Computer Science & Engineering	Nov 2015 - Feb 2020
<ul style="list-style-type: none"> • GPA: 3.43/4.0 	

Publications

Hybrid Text Summarizer for Bangla Documents	Nov 2020
Int. Journal of Computer Vision and Signal Processing (IJCVP), Vol 10, No. 1	
<ul style="list-style-type: none"> • First Author. • Topic: Natural Language Processing, Text Summarization & Machine Learning. 	
Adaptable Social AI Agents	May 2025
<i>ToM4AI Workshop at AAAI 2025</i> , pp. 26	
<ul style="list-style-type: none"> • Workshop paper presenting episodic self-explanation capabilities for SAMI. 	
Correcting LLM Errors: A Metacognitive Architecture for ToM Adaptation in AI Agents	Jan 2026 (In Press)
<i>ToM4AI Workshop at AAAI 2026</i>	
<ul style="list-style-type: none"> • 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	Jan 2026 (In Press)
<i>IAAI-26: Emerging Applications of AI</i>	
<ul style="list-style-type: none"> • 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. 	

Research

SAMI (Social Agent Mediated Interactions) Design Intelligence Lab (NSF-funded)	Aug 2024 – Dec 2025
<ul style="list-style-type: none"> • Contributed 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: <ul style="list-style-type: none"> – 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 hallucination, omission, misinterpretation, or user-initiated updates.
 - Developed pipelines combining **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.
- Technologies: **Python**, **Neo4j**, **OpenAI (LLMs)**, **Docker**.

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