

# Mahimul Islam

Full Stack Engineer

MS in Computer Science, Georgia Institute of Technology

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**Links:** [LinkedIn](#) | [Portfolio](#) | [GitHub](#)

## Experience

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**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

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<b>Georgia Institute of Technology</b> , Master of Science in Computer Science	Jan 2024 – Dec 2025
• GPA: 3.7/4.0	
• <b>Specialization:</b> Interactive Intelligence	
<b>Ahsanullah University of Science &amp; Tech</b> , BS in Computer Science & Engineering	Nov 2015 - Feb 2020
• GPA: 3.43/4.0	

## Publications

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<b>Hybrid Text Summarizer for Bangla Documents</b>	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.	
<b>Adaptable Social AI Agents</b>	May 2025
<i>ToM4AI Workshop at AAAI 2025</i> , pp. 26	
• Workshop paper presenting episodic self-explanation capabilities for SAMI.	
<b>Correcting LLM Errors: A Metacognitive Architecture for ToM Adaptation in AI Agents</b>	Jan 2026 (In Press)
<i>ToM4AI Workshop at AAAI 2026</i>	
• 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.	
<b>A Metacognitive Architecture for Correcting LLM Errors in AI Agents</b>	Jan 2026 (In Press)
<i>IAAI-26: Emerging Applications of AI</i>	
• 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

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<b>SAMI (Social Agent Mediated Interactions)   Design Intelligence Lab (NSF-funded)</b>	Aug 2024 – Dec 2025
• Contributed to the development of <b>SAMI</b> , 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.	
• <b>Key Contributions:</b>	
– Co-designed and implemented SAMI's <b>two-level metacognitive self-adaptation architecture</b> , 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

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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