AHSANUL AMEEN SABIT

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EDUCATION

Bachelor of Science in Computer Science and Engineering February 2017 - April 2022
Bangladesh University of Engineering and Technology **CGPA: 3.53/4.00**
Thesis title: *`A study on graph based secret-sharing schemes`*, supervised by *Dr. Md. Saidur Rahman*
Research Area: Graph Theory, Algorithms and theory, Information Security

Higher Secondary Certificate (HSC) July 2014 - July 2016
BAF Shaheen College, Dhaka **GPA: 5.00/5.00**

PROFESSIONAL EXPERIENCE

IQVIA

Software Development Engineer 3 *Apr 2025 – Present*

- Architected **Planner Algorithm v1.0 & v2.0** for dynamic HCP segmentation, reducing configuration complexity by **50engine**, improving **HITL-driven agent workflows**.
- Developed APIs for the **Judge Agent metric engine** to evaluate agent **performance and security**.
- Optimized **ETL pipelines** and integrated data-service APIs for **Snowflake datamarts**, boosting agent efficiency and scalability.

Software Development Engineer 2 *Jan 2024 – Mar 2025*

- Developed the **multi-agentic** UI configuration backend from scratch as part of AI Assistant integration, **reducing agent configuration complexity by 80%**.
- Co-led an **agile** backend team; designed, implemented, and reviewed layered architecture features for various **microservices** and **in-house libraries** using .NET Core, EF Core, SQL, NoSQL, rabbitMQ, Angular, NUnit etc.
- Improved **API performance by 60%** via advanced **caching** and ORM **query optimization** mechanisms and authored SQL scripts for multiple databases & **multi-tenancy testing** management.
- Built a **proactive messaging bot** service as a proof-of-concept, integrating **MS Teams Bot** with existing applications using the **Bot Framework SDK**.

Software Developer *Sep 2022 – Dec 2023*

- Implemented translation support for the Next Best Action platform, **expanding regional coverage by 50% across Japan and other Asian markets**.
- Managed **daily builds, patches, and release processes** using **Amazon EKS and GitLab CI/CD**, ensuring robust and reproducible deployments.
- **Mentored** three junior developers during onboarding, promoting best practices and accelerating team productivity. Wrote comprehensive unit, BDD, and API contract tests.

Samsung R&D Institute Bangladesh

Software Engineer *Jun 2022 – Aug 2022*

- Conducted **R&D** on **Generative Adversarial Networks (GANs)**, contributing to experimental **ML research** initiatives.
- Collaborated with the **web engine** team; gained hands-on exposure to Chromium's high-level architecture, rendering pipeline, and painting mechanism.
- Prepared detailed **sequence diagrams** for complex method stacks, elucidating system behavior and aiding in design decisions.
- Performed code reviews, issue resolution, and unit testing to ensure robust implementation of browser engine.

RESEARCH EXPERIENCE

Naturalistic embedding of selfies inside group photos, *in association with Samsung Research* (2022)
- Utilized Pose-Guided GAN and DeepFashion Datasets towards developing a method for pose-transferring selfies and embedding them realistically into group photos.

Rapid Secret Sharing using st-Numbering Scheme, supervised by *Dr. Md. Saidur Rahman* (2021-22)
- Conducted an analytical and algorithmic study on secure message passing over key-sharing graphs. Developed a generalized secret-sharing protocol using st-numbering and st-routing, enabling secure key agreement between any two participants under partial key leakage. Explored information ratios to optimize memory usage, proposed XOR-based methods for secure key exchange, and extended the scheme to non-biconnected graphs with dynamic node insertion/deletion while minimizing eavesdropper exposure and computation.

RESEARCH INTERESTS

I have initial research experience in the fields of graph theory, security, algorithms and theory. However, I am highly interested in exploring other areas such as *software engineering, machine learning, computer security, computer networks, databases, high performance computing, HCI, Agentic AI* and so on.

UNDERGRADUATE COURSEWORKS

Algorithm Engineering, Machine Learning, Artificial Intelligence, Computer Security, Software Engineering, Compiler, Basic Graph Theory, High Performance Database System, Computer Networking

AWARDS & ACHIEVEMENTS

- **Impact Program – Silver Award, IQVIA (2025)** Recognized for contribution to designing and developing the Agent Studio platform and NBA agent-based offerings.
- **Impact Program – Platinum Award, IQVIA (2023)** Highest IQVIA Impact Program award, recognizing contributions to the Next Best Actions team, including team-building in Dhaka, delivering NBA translation stories, and improving regional revenue opportunities.
- **SWC Professional Level Programmer, SAMSUNG (2022)** Awarded by Samsung R&D Institute Bangladesh for achieving Professional Level in the 'SWC Profession Test'.
- **10th Best Paper Award – IEEE CS BDC Summer Symposium (2021)** *Rapid Secret Sharing using st-Numbering Scheme* (PID-74), Track 4: 5G Internet and Security.
- **Specialist at Codeforces** Solved 1500+ problems on various platforms including HackerRank and LeetCode.
- **Government Scholarship, Bangladesh (2016-2022)** For outstanding performance in Higher Secondary School Certificate Examination.
- **Government Scholarship, Bangladesh (2014-2016)** For outstanding performance in Secondary School Certificate Examination.

SKILLS

Programming Languages	C#, Python, C, C++, Java, Shell, Javascript, Assembly, Swift, HTML, CSS
Build Tools	NuGet, .NET CLI
BackEnd Frameworks	ASP .NET Core, Entity Framework Core, FastAPI, Node.js, Express, Passport
Database Experience	PostgreSQL, MSSQL, MongoDB, Firebolt, Snowflake, Oracle
UI Frameworks	Vue.js, Vuex, Angular, OpenGL, JavaFX
Technical Writing	LaTeX, Beamer, Overleaf
VCS & DevOps Tools	Github, GitLab, Docker, Kubernetes, Gitlab CI/CD
Agent Development Tools	LangSmith, LangFlow, MCP
Cloud	AWS, Azure, GCP

ACADEMIC & PERSONAL PROJECTS[links embedded]

Sign Language Classification (2022): An ML project comparing multiple datasets and achieving higher accuracy through a **combined CNN** model. Datasets: Sign Language MNIST, ASL Alphabet, Digits. Languages & Frameworks: Python (TensorFlow)

Interactive Code Learning Platform (2021): Developed a coding skill evaluator web application with a **RESTful API** backend using Node.js, Express, and Passport. Utilized PostgreSQL as the database and implemented the frontend with Vue.js, Vuex, and BootstrapVue.
Demo: Interactive Code Learning Platform

ICMP Ping Spoofing + ICMP Redirect Attack (2021): Built an attack tool in C and Python, enabling spoofing of ICMP echo requests with custom source IPs, and created a redirect attack tool to advertise vulnerable gateways to victims.

Line of Action (2020): Developed a Java-based AI bot with a JavaFX interface for the game "Line of Action," utilizing adversarial search algorithms.

Nand to Tetris(Part 1 & 2)(2020): There are 12 projects originated from a crash course on how computers actually operate. In the first part, we've built the hardware hierarchy of a simple computer named *"Hack"* through six sequential projects. In the second part, we developed a two-tier compiler and a simple OS for a high-level Java-like object-oriented language named *"Jack"*, which doesn't support inheritance. Outputs were tested via Coursera autograder. Technologies: HDL, C, C++, Java

Almost C Compiler(2019): Created a compiler for a subset of the C language, implementing lexical analysis, parsing (flex/yacc), and code generation for x86 microcontrollers.

Smart Stick (2019): Designed a walking cane for visually impaired users using Bluetooth, sonar sensors, and an ATmega32 microprocessor. The cane detects obstacles and can be located via an Android app. Language: C++

Network Chess (2018): Developed a two-player chess game supporting both offline and online (client-server) play using socket programming. Implemented GUI for board and server using JavaFX, applying strong OOP principles.

CERTIFICATIONS

Build ETL Pipeline in GCP: Load GCS Data to BigQuery via Dataflow: Learned to create an ETL pipeline using GCP, extracting the data from GCS, cleaning and transforming it using Apache Beam and Dataflow, and finally loading it to BigQuery.
Introduction to AI Agents IQVIA: Understanding AI Agents and their types.
Designing and Implementing AI Agents: Various AI agents and their reasoning cycle: ReAct, MRKL, and HITL.
Building AI Agents Using Langflow: Prototyped a ReAct agent using Langflow, using Azure OpenAI models, added web search, vector DB, Knowledge Base, RAG.
Introduction to Agile - Scrum and Kanban: Adopt the Agile mindset, discover Scrum and its development cycle, Kanban.
REST API vs GraphQL vs gRPC - The Complete Guide: Learn the three most popular Web APIs in the industry and how to choose the right one while knowing the advanced concepts and demonstrations, pros and cons, and utilizing a decision tree.
Software Architecture: REST API Design - The Complete Guide: Best practices of RESTful API design, correct use of HTTP Verbs, URL structure, and response codes, Authentication & Authorization capabilities, improving performance and reducing latency.
Microservices Architecture - The Complete Guide: The 9 attributes of Microservices, its architectural process.
Deep Learning Specialization: Built and optimized neural networks (CNNs, RNNs, LSTMs, Transformers) using Python and TensorFlow for tasks including speech recognition and NLP.