

# AHSANUL AMEEN SABIT

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## EDUCATION

<b>Bachelor of Science in Computer Science and Engineering</b> Bangladesh University of Engineering and Technology Thesis title: <i>A study on graph based secret-sharing schemes</i> , supervised by <i>Dr. Md. Saidur Rahman</i> Research Area: Graph Theory, Algorithms and theory, Information Security	February 2017 - April 2022 <b>CGPA: 3.53/4.00</b>
<b>Higher Secondary Certificate (HSC)</b> BAF Shaheen College, Dhaka	July 2014 - July 2016 <b>GPA: 5.00/5.00</b>

## PROFESSIONAL EXPERIENCE

<b>IQVIA</b> <b>Software Development Engineer 3</b>	<i>Apr 2025 – Present</i>
<ul style="list-style-type: none"><li>Architected <b>Planner Algorithm v1.0 &amp; v2.0</b> for dynamic HCP segmentation, reducing configuration complexity by <b>50%</b>. Built an <b>MCP server</b> with form-based tools supporting ML classification and sales co-planner <b>recommendation engine</b>, improving <b>HITL-driven agent workflows</b>.</li><li>Defined architecture for <b>Judge Agent</b> metric APIs with <b>refresh token lifecycle management</b> to ensure secure, uninterrupted authentication in <b>AWS Lambda</b> runs.</li><li>Integrated data-service <b>secured APIs</b> for <b>Snowflake datamart</b> access, boosting agent efficiency and scalability.</li></ul>	
<b>Software Development Engineer 2</b>	<i>Jan 2024 – Mar 2025</i>
<ul style="list-style-type: none"><li>Developed the <b>multi-agentic</b> UI configuration backend from scratch as part of <b>AI Assistant</b> integration, <b>reducing agent configuration complexity by 80%</b>.</li><li>Co-led an <b>agile</b> backend team; designed, implemented, and reviewed layered architecture features for various <b>microservices</b> and <b>in-house libraries</b> using .NET Core, EF Core, SQL, NoSQL, rabbitMQ, Angular, NUnit etc.</li><li>Resolved a critical <b>cached token expiry</b> issue in production by identifying and fixing the root cause through extensive experimentation, ensuring stable authentication and uninterrupted <b>service availability</b>.</li><li>Enhanced <b>API performance by 60%</b> through advanced caching and ORM query tuning, and delivered DevOps-requested SQL scripts for <b>multi-tenancy validation</b> and <b>Blue-Green Deployment</b> rollout management.</li><li>Built and deployed a <b>proactive messaging bot</b> service as a proof-of-concept, integrating <b>MS Teams Bot</b> with existing applications using the <b>Bot Framework SDK</b> and <b>Azure</b> architecture.</li></ul>	
<b>Software Developer</b>	<i>Sep 2022 – Dec 2023</i>
<ul style="list-style-type: none"><li>Implemented translation support for the <b>Next Best Action</b> platform, <b>expanding regional coverage by 50% across Japan and other Asian markets</b>.</li><li>Managed <b>daily builds, patches, and release processes</b> using <b>Amazon EKS</b> and <b>GitLab CI/CD</b>, ensuring robust and reproducible deployments. Remediated CVEs and <b>security vulnerabilities</b> in backend services by analyzing Black Duck (SCA), Aqua image, and SonarQube scan reports, improving codebase security and compliance.</li><li><b>Mentored</b> three junior developers during onboarding, promoting best practices and accelerating team productivity. Wrote comprehensive unit, BDD, and API contract tests.</li></ul>	
<b>Samsung R&amp;D Institute Bangladesh</b> <b>Software Engineer</b>	<i>Jun 2022 – Aug 2022</i>
<ul style="list-style-type: none"><li>Conducted <b>R&amp;D</b> on <b>Generative Adversarial Networks (GANs)</b>, contributing to experimental <b>ML research</b> initiatives.</li><li>Collaborated with the <b>web engine</b> team; gained hands-on exposure to Chromium's high-level architecture, rendering pipeline, and painting mechanism.</li><li>Created detailed <b>sequence diagrams</b> and performed <b>code reviews, issue resolution, and unit testing</b> to ensure robust browser engine design and implementation.</li></ul>	

## RESEARCH EXPERIENCE

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### **Naturalistic Embedding of Selfies Inside Group Photos, in Association with Samsung Research (2022)**

- Utilized Pose-Guided GAN and DeepFashion datasets to develop 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.

### **Code Correction & Statistics, Supervised by Nafis Irtiza Tripto (2020)**

- Processed CS lab student C/C++ submissions to generate structured (faulty → corrected) code pairs and developed a Java/shell preprocessing pipeline. Explored Seq2Seq models and evaluation metrics for automated code correction, modeling how students identify and fix programming errors.

## RESEARCH INTERESTS

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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.

## AWARDS & ACHIEVEMENTS

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- **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

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

## ACADEMIC & PERSONAL PROJECTS

**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.

**The Bits and Bytes of Computer Networking**: Gained foundational knowledge in computer networking, including OSI/TCP-IP models, network protocols, troubleshooting, VPNs, and cloud networking concepts.