Md Shahedul Haque

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Education

Virginia Tech, College of Engineering — Alexandria, Virginia
Master of Science in Computer Science, Cumulative GPA 3.83/4.00 — *December 2025*
- **Relevant Coursework:** Database Systems, Cloud Computing, Machine Learning (ML), Information Security, Statistics

Bangladesh University of Engineering and Technology (BUET) — Dhaka, Bangladesh
Bachelor of Science in Computer Science and Engineering, Cumulative GPA 3.29/4.00 — *February 2021*

Technical Skills

Languages: Python, SQL, Java, JavaScript/TypeScript, HTML/CSS, C, C++, R, MATLAB, LaTeX, Shell Scripting
Databases & Data Modeling: Oracle (PL/SQL), Microsoft SQL Server, MySQL, SQLite, RDBMS, ACID Compliance
Developer Tools: Linux, Git, CI/CD Pipelines, Visual Studio, VS Code, PyCharm, NetBeans, Agile/Scrum, SDLC
Frameworks & Back-end: Node.js, AngularJS, Django, Flask, REST API Design, PyTorch, TensorFlow, Keras, JavaFX
Libraries: pandas, NumPy, Scikit-learn, SciPy, D3.js, Requests, Beautiful Soup, Matplotlib, Seaborn, Hugging Face
Cloud & Distributed Systems: AWS (EC2, RDS, EMR, Lambda, SageMaker), PySpark, Hadoop, Microservices Arch
Project & Collaboration Tools: Requirement Analysis, Governance, Documentation, ITIL, Microsoft Office Suite

Professional Experience

Virginia Tech, Graduate Research Assistant | Arlington, VA — Aug. 2022 – Dec. 2025
- Automated data processing, integration, batch reporting, and shell scripting pipelines in Python, developing reusable modular components to improve workflow efficiency and support large-scale operations across distributed systems
- Facilitated weekly stakeholder meetings and collaborated with cross-functional teams to gather requirements, communicate findings, and deliver production-ready system improvements
- Maintained detailed project documentation and version-controlled codebases using Git, ensuring compliance with data standards and supporting long-term team collaboration

Children's National Medical Center, Research Trainee | Washington, DC — May 2024 – Aug. 2024
- Standardized data validation and evaluation pipelines using Python and SciPy, improving consistency and accuracy of analytical outputs and ensuring system reliability
- Executed large-scale system simulations to stress-test application performance and validate data integrity under real-world clinical failure conditions
- Communicated technical findings and system risks to non-technical partners and documented analysis results, supporting informed decision-making across multidisciplinary teams

Loosely Coupled Technologies Sdn Bhd, Software Developer | Dhaka, Bangladesh — May 2021 – Aug. 2021
- Built and deployed full-stack web applications using JavaScript (AngularJS/Node.js), HTML, and CSS, implementing RESTful APIs and MVC architecture to support high-concurrency user traffic
- Maintained and optimized MSSQL stored procedures and relational database schemas to ensure data integrity, performance, and reliable backend support for enterprise web applications
- Collaborated with international product teams to gather, document, and translate business requirements into production-ready application features throughout the full Software Development Life Cycle (SDLC)
- Conducted unit and integration testing within an Agile development workflow and managed structured feature releases using Git and CI/CD pipelines

Relevant Projects

Environmental Pollution Prediction & Visualization | *Flask, D3.js, TensorFlow, SQLite* — Jan. 2023 – May 2023
- Served as a data product owner in a team of four to design and create a web-based platform integrating ML predictions with real-time monitoring dashboards via Flask with RESTful services
- Built end-to-end data pipelines using Python, Pandas, and SQLite to support data ingestion, integration, transformation, and analysis
- Translated model outputs into actionable visual insights using D3.js to support data-driven decision-making

Online Product Locator (Web) Application | *Django, MySQL, HTML/CSS, Git* — Nov. 2018 – July 2019
- Led a team of three to develop a scalable full-stack web application for product search and discovery using Django for RESTful API development and MySQL for secure, relational data storage and schema management
- Transformed monolithic logic into reusable, service-based components, improving system maintainability and supporting integration with third-party data sources
- Adopted Agile development practices and version control (Git) to manage feature releases, testing, deployment, team collaboration, and CI/CD workflows

Online Retail Management (Desktop) App | *Java, Oracle, JavaFX, HTML/CSS* — Sep. 2017 – Dec. 2017
- Delivered a robust enterprise-style system supporting inventory and transaction management using Java and Oracle
- Implemented CRUD operations and relational data models, ensuring ACID compliance and data consistency