Partha Sarker

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Education

B.Sc. (Engg.) in Computer Science and Engineering   Sylhet, Bangladesh | **2017 – 2021**
Shahjalal University of Science and Technology
- **CGPA: 3.76/4.0** (Ranked 10th out of 107 students)
- **Thesis**: A Notification-Based Nudge for Handling Excessive Smartphone Use.
- **Advisor**: Marium-E- Jannat

Research Experience

Thesis: A Notification-Based Nudge for Handling Excessive Smartphone Use. [arXiv]   **Jan 2020 – Jun 2021**
- Developed *App Usage Monitor*[GitHub], an **Android** app that reduces smartphone overuse using **notification-based nudges**, grounded in **Human-Computer Interaction (HCI)** principles. The app enhances user **self-awareness** without causing frustration or annoyance.
- **Reduced smartphone usage by over 6%** through a **three-week experiment**.

Lab Project: Handwritten Word Segmentation. [GitHub]   **Jan 2020 – Dec 2020**
- Implemented **word segmentation** from **handwritten documents** using **Python** and **OpenCV**.

Work Experience

Software Engineer I | MarginEdge | Remote   Arlington, Virginia, USA | **Aug 2024 – Present**
Project: MarginEdge Platform
Comprehensive restaurant management software integrating with 60+ POS systems for automated invoice processing, inventory management, and real-time P&L insights.
- **Systems Optimization**: Reduced data processing time by **97% (100min → 3min)**
- **Monitoring Infrastructure**: Created real-time AWS dashboards cutting incident triage by 60%
- **Data Integrity**: Developed migration validation system preventing data loss.
  - Spring Boot, Postgres, React, AngularJS, AWS (CloudWatch, DynamoDB, S3, EC2, Lambda, SQS)

Software Engineer | Dynamic Solution Innovators | Onsite   Dhaka, Bangladesh | **May 2021 – Jul 2024**
Project: IEIMS (Integrated Education Information Management System)   May 2021 - Dec 2023
National digital platform developed by the Bangladesh Ministry of Education to streamline and optimize the management of secondary and higher secondary education operations.
- **Large-Scale Systems**: Developed national education platform serving **20M+ students**.
- **Performance Engineering**: Optimized database queries (**50s → 4s** response time).
- **Process Automation**: Created **QR attendance system** reducing manual work by 80%.
- **Distributed Systems**: Containerized microservices using Docker/Kubernetes.
  - Spring Boot, Kubernetes, Docker, Next.js, MS SQL Server, Jenkins

Project: CRVS (Civil Registration and Vital Statistics)   Jan 2024 - Jul 2024
National CRVS system in Bangladesh for recording vital events such as births, deaths, marriages, and divorces, enhancing data accuracy, accessibility, and public service delivery.
- **Automation**: Automated digital ID creation for **10M+ records**.
- **System Optimization**: Optimized database queries (**50s → 4s** response time).
  - Laravel, Oracle Database

Technical Projects

- **AR Girl (Augmented Reality)**: **AR** character controller for real-world navigation using **Unity**, **ARCore** and **C#**.
- **App Usage Monitor**: **Android** app tracking usage with **target notifications** to reduce smartphone overuse.
- **ECHO**: **Sign language interpreter** for text/speech conversion developed with **Android Studio** and **Java**.
- **FIGHT**: **3D local multiplayer** fighting game with 1v1 combat mechanics created with **Unity** and **C#**.
- **Shikha**: **2D side-scrolling puzzle-adventure** game with level progression built with **Unity** and **C#**.
- **Linear Equation Solver**: **Gaussian solver** and **Petri Net simulator** with visualization built with **Unity** and **C#**.
- View all projects in my **Portfolio**.

Awards & Recognition

Perfect Performance Review | MarginEdge **2025**
- Rated *Exceeding Expectations* across all performance evaluation categories.

2nd Runner-up, National Hackathon | LICT SUST Techfest **2019**
- Demonstrated leadership and teamwork by coordinating team efforts to develop *ECHO*, a sign language interpreter application for the disabled community.

Merit Scholarship | Shahjalal University of Science and Technology **2017 - 2021**
- Awarded for academic excellence (Top 10%).

Competitive Programming Achievement **2017 - Present**
- Problem Solving | HackerRank | Certificate
- Solved 500+ data structure, algorithmic problems on various online judges. LeetCode, StopStalk.

Certifications

Claude Code in Action | Certificate Anthropic | Sep 2025
- Covers Claude Code's architecture, usage, and integrations

Machine Learning Foundations | Certificate University of Washington | June 2020
- Covered case study approach to ML applications and algorithms

Chatbot Development with Rasa | Certificate Coursera | May 2020
- Built conversational AI systems using Python

Skills & Technologies

Programming Languages: Java, Python, JavaScript, TypeScript, C#, SQL, C++, PHP

ML/AI: PyTorch, TensorFlow, Keras, OpenCV, Scikit-learn, NumPy, Pandas, Matplotlib

Game Development & Design: Unity, Unreal Engine, Blender, AR Development, Photoshop

Cloud & DevOps: AWS (EC2, S3, Lambda, CloudWatch, SQS, SNS), Docker, Kubernetes, Lens, Jenkins, Vercel

Databases: PostgreSQL, SQL Server, MySQL, Oracle Database, DynamoDB, Firebase

Tools & Platforms: Spring Boot, React, Next.js, Mockito, Jest, RabbitMQ, Liquibase, MinIO, Android Studio

Extracurricular & Leadership Activities

SUST Tech Fest **Apr 2019**
- Led the Food and Convenience Section, ensuring smooth logistics and a great participant experience.

Silver Jubilee Reunion **Feb 2018**
- Coordinated entertainment activities for alumni's children, ensuring an engaging and enjoyable experience.

SUST CSE Carnival **Aug 2017**
- Led the gaming competition section, overseeing logistics and ensuring high participant engagement.