

# Partha Sarker

Dhaka, Bangladesh | parthasarker3@gmail.com | +880 1521-428057 | [LinkedIn](#) | [Github](#) | [Portfolio](#)

## Education

### B.Sc. (Engg.) in Computer Science and Engineering

Sylhet, Bangladesh | 2017 – 2021

Shahjalal University of Science and Technology

- CGPA: **3.76/4.0**
- Thesis: A Notification-Based Nudge for Handling Excessive Smartphone Use
- Advisor: [Marium-E- Jannat](#)

## Research Experience

**Undergraduate Thesis: A Notification-Based Nudge** for Handling Excessive Smartphone Use. [\[arXiv\]](#)

2020 – 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** with **16 participants**.

**Lab Project: Handwritten Word Segmentation.** [\[GitHub\]](#)

2020 – 2020

- Implemented **word segmentation** from **handwritten documents** using **Python** and **OpenCV**.

## Teaching Experience

**Guest Lecturer** | Metropolitan University

Sylhet, Bangladesh | November 2024

Conducted specialized sessions on machine learning algorithms: Feature engineering, Naive Bayes, regression, SVMs, decision trees, and PCA

## Work Experience

**Software Engineer I** | [MarginEdge](#) | Remote

Arlington, Virginia, USA | August 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 – July 2024

**Project:** IEIMS (Integrated Education Information Management System)

National digital platform managing 20M+ student' educational operations for Bangladesh Ministry of Education.

- **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)

National system for recording birth, death, marriage, divorce with automated digital ID creation for 10M+ entries.

- **Automation:** Automated digital ID creation for **10M+ records**
- **System Optimization:** Optimized database queries (**50s → 4s** response time)
  - Laravel, Oracle Database

## Awards & Recognition

<b>Perfect Performance Review</b>   MarginEdge	2025
• Rated <i>Exceeding Expectations</i> across all performance evaluation categories	
<b>2nd Runner-up, National Hackathon</b>   LICT SUST Techfest	2019
• Developed <i>ECHO</i> sign language interpreter to help disabled people communicate	
<b>Merit Scholarship</b>   Shahjalal University of Science and Technology	2017 - 2021
• Awarded for academic excellence (Top 10%).	
<b>Competitive Programming Achievement</b>	2017 - Present
• Problem Solving (Basic)   HackerRank   <a href="#">Certificate</a>	
• Solved 500+ data structure, algorithmic problems on various online judges. <a href="#">LeetCode</a> , <a href="#">StopStalk</a> .	

## 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#**
- **P2P Messaging App**: Peer-to-peer local network communication with **file sharing** built with **Android Studio**
- **Spring SSO**: Single Sign-On implementation using **OAuth2** developed with **Spring Boot** and **Java**
- **Glut Polygon Drawing**: Interactive **polygon rendering** and transformation tool built with **C++** and **OpenGL**

## Certifications

<b>Machine Learning Foundations</b>   <a href="#">Certificate</a>	University of Washington   June 2020
• Covered case study approach to ML applications and algorithms	
<b>Chatbot Development with Rasa</b>   <a href="#">Certificate</a>	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, DynamoDB), Docker, Kubernetes, Jenkins, Vercel  
**Databases**: PostgreSQL, SQL Server, MySQL, Oracle Database, Firebase  
**Tools & Platforms**: Mockito, Jest, RabbitMQ, Liquibase, MinIO, Lens, Android Studio, Spring Boot, React, Next.js

## Extracurricular & Leadership Activities

<b>SUST Tech Fest</b>	April 2019
• Responsibilities in the Food and Convenience Section for participants	
• Participated in Inter-University Programming Contest	
<b>Silver Jubilee Reunion</b>	February 2018
• In charge of the Entertainment section (focused on alumni's children)	
<b>SUST CSE Carnival</b>	August 2017
• Handled the gaming competition section	
• Participated in Inter University Programming Contest	
<b>General Member</b>	2017 - 2020
• CSE Society, Shahjalal University of Science and Technology	