

# ABDUR RAHMAN FAHAD

Dhaka, Bangladesh

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## EDUCATION

**Bangladesh University of Engineering and Technology (BUET)**

*Bachelor of Science in Computer Science and Engineering*

**CGPA - 3.27/4.00**

*Feb 2017 – May 2022*

**Notre Dame College, Dhaka**

*Higher Secondary School Certificate*

**GPA - 5.00/5.00**

*2014 – 2016*

**Rajuk Uttara Model College**


*Secondary School Certificate*

**GPA - 5.00/5.00**

*2012 – 2014*

## WORK EXPERIENCE

**Software Engineer (ML/AI)**

*Tiger IT Bangladesh Limited* 

**June, 2022 – Present**

*Dhaka, Bangladesh*

Working in R&D department of the leading company in biometrics in the country. Our team focuses on research and development of core solutions to biometric identification systems.

- Developed Segmentation model for analyzing Ultrasound images to detect Hip Dysplasia.
- Developed face matcher android library using Pytorch lite, android apps for face identification and face similarity score.
- Developed lightweight, accurate, fast face embedding generation model suitable for using in smartphone.
- Implemented deep learning model to generate orientation and fingerprint template from incomplete and obscure images.
- Developed django server and web client for demonstration of face matching along with age, emotion and other facial attribute prediction.
- Developed android app for fingerprint matching using external scanner.
- Wrote scripts for data preprocessing, data analysis, annotation tools.
- Developed deep learning models for Iris area, pupil, eye lash segments detection using semantic segmentation.

## RESEARCH EXPERIENCE

**Fingerprint Identification System** | *Tiger IT Bangladesh Limited*

**2022 - Present**

In this project we aim to further improve our existing state-of-the-art Fingerprint Identification System which is ranked in [NIST](#), [FVC ongoing](#). We experimented with various deep learning models to generate segmentation and orientation of ridge, fingerprint template from incomplete and obscure images.

**Face Recognition System** | *Tiger IT Bangladesh Limited*

**2022 - Present**

We are focused on improving the performance and efficiency of our Face Recognition System. We are exploring and experimenting with deep learning models to develop better face detection and embedding generation in difficult lighting conditions. We are analyzing challenging imposters to improve accuracy of verification.

**Iris Recognition System** | *Tiger IT Bangladesh Limited*

**2022 - Present**

Our research focuses on improving accuracy of our existing iris recognition algorithm ([IREX-10](#)). We are developing segmentation models to detect iris area along with pupil, eye lash segments.

**Performance Comparison Between PostgreSQL and Hbase for Data Warehouse** | *Undergraduate Thesis*








**2022**

Supervised By: Dr. Abu Sayed Md. Latiful Hoque, Professor, CSE, BUET

As part of undergraduate thesis we performed in depth analysis of the execution time of performing large-scale data analytics on patient data. The aim of this research was to choose suitable database for National Clinical Data Warehouse.

## ACADEMIC PROJECTS

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- Crop Disease Detection**  | *Tensorflow, Numpy, Colab* **2022**  
A supervised machine learning model to detect crop diseases from images of leaves.
- Ride Sharing App - TakeMe**  | *Android(Java), ExpressJS, MongoDB* **2021**  
Developed a ride sharing app for android platform with separate apps for User and Driver.
- DoS attack to the DNS server**  | *C++, Bash, Oracle VM, Wireshark* **2021**  
Demonstrated attack on DNS Server using spoofed IP address resulting in Denial-of-service. Exhausted the server's resources with a flood of UDP requests, generated by scripts running on several virtual machines.
- Ray Tracing**  | *OpenGL, C++* **2021**  
Implemented illumination with Phong lighting model, intersection of light ray with 3D objects, multi-level reflection, refraction using ray tracing, texture etc.
- C Compiler**  | *Bison, Flex, C, Emu8086* **2019**  
A compiler that generates equivalent 8086 assembly code from C code. Implemented Symbol Table, Lexical Analyzer, Syntax Analyze and Intermediate Representation Generator.
- Smart Traffic Signal Control System**  | *ATmega32, C, HC-SR04* **2019**  
Designed a traffic signal control system which automatically detects traffic jam using ultrasonic sensor and controls the traffic signal accordingly.
- Car Crash Game**  | *C, iGraphics* **2017**  
Developed a game using custom c graphics framework.

## TECHNICAL SKILLS

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### Languages

C++, Python, Java, HTML, SQL, MATLAB, Latex

### Technologies/Frameworks

PyTorch, OpenCV, Pandas, Numpy, Django, Android Studio, PostgreSQL, Linux, Git, Docker

## PROBLEM SOLVING

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### Codeforces |

Solved 300+ problems, attended 30+ contests. (Max rating - 1408)

### Toph |

Solved 300+ problems.

### Hackerrank |

Problem Solving (Intermediate) Certificate, Cpp gold badge and other badges. Solved around 100 problems

### Codechef |

Max rating - 1654

### Leetcode |

Solved around 70 problems.

## ACHIEVEMENTS

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- [2018] Achieved 7th position in CSE FEST 2018 Programming Contest arranged by Dept of CSE, BUET.
- [2017] University Stipend for Excellence in BUET Entrance Exam
- [2016] Government Scholarship in Higher Secondary School Certificate Exam
- [2014] Government Scholarship in Secondary School Certificate Exam

## REFERENCES

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### Dr. Abu Sayed Md. Latiful Hoque

Professor, Department of CSE, Bangladesh University of Engineering and Technology (BUET)

- Email: asmlatifulhoque@cse.buet.ac.bd

### Shakil Ahmed

Lead Software Engineer, R&D Department, TigerIT Bangladesh Ltd

- Email: shakil@tigerit.com