

# Md Akibul Islam Alvee

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## EDUCATION

**Shahjalal University of Science & Technology, Sylhet**  
*BSc(Engg.) in Computer Science & Engineering*  
**CGPA:** 3.66/4.00 (**3.87** in last two years)

Feb 2018 – March 2023

## RESEARCH EXPERIENCE

### Undergraduate Thesis

*Enhancement and Improvement of Underwater Image Semantics Using Multi-Domain Neural Rendering, Supervised by [Summit Haque](#) (Assistant Professor, SUST), [Sowmen Das](#) (Research Engineer, Mediatek Research UK)*

- Identified common image degradation issues and challenges in underwater environments. Focused on overcoming the low-light conditions, blurriness, and saturation distortions in underwater images.
- Used Normalizing Flows combined with multiple color spaces to extract complex features from raw images. Focused on richer feature representations for limited scene diversity in the underwater image dataset.
- Proposed model was motivated by OpenAI's *Glow* architecture, and delivered results that matched the results of the state-of-the-art methods.

### Innovation at Samsung Research

- Selected to present *Enhanced Underwater Image Mode for Camera* at [Samsung AI PoC Exhibition](#).
- Worked on multiple patentable innovations (DOI) including a novel methodology for early hypothermia detection, intent-based gesture system for HMD devices, and UWB-based gaze estimation
- Submitted multiple innovative solutions in *Samsung Mobile Developer Conference*, including device control system using wristwatch interfaces and Smart AI Notification framework for IoT camera devices.

## WORK EXPERIENCE

**Samsung R&D Institute Bangladesh | [Visit](#)**  
*Senior Software Engineer*

April 2023 – Present

- Worked on the CameraPlugin module of [Samsung SmartThings](#) to enable the live streaming, two-way talk for **IoT Camera** using *WebRTC* and *Gstreamer* framework.
- Implemented *Reactive Programming* patterns in .NET to efficiently process and manage real-time data streams from servers, optimizing application responsiveness and resource utilization while handling complex asynchronous operations.
- Developed the LiveStreaming, Two-way-talk, Audio-Video Mixing and Transcoding pipeline from scratch using *Gstreamer* framework in CPP.
- Worked with SDP Offer exchange protocol, media stream transmission/receiving through the Transceiver module, and P2P Connection establishment via *WebRTC* in CPP.
- Implemented hardware-accelerated rendering using Hardware Pointer in C++ and utilized AppServiceConnection for efficient *IPC communication*, including request handling and data parsing from the server using the .NET framework.
- Developed the *Push Notification* features for CameraDevices, also handled the Server Sent Event(SSE) during the streaming from other IoT devices.

## ACADEMIC PROJECTS

**FitmentCraft | [GitHub](#)**

June 2022 – Aug 2022

*Used Technologies:* NodeJS, ReactJS, ExpressJS, MongoDB

- Simulated an e-commerce system integrating an online retailer, a backend supplier, and a bank to handle transactions
- Managed the Bank and Supplier APIs, facilitating seamless transactions between users, the e-commerce platform, and the supplier

**TourGuide | [GitHub](#)**

Nov 2021 – Dec 2021

*Used Technologies:* Python, Django, PostgreSQL

- Web platform for the reservation of tours and flights, sharing experiences, rating recommendations, and providing feedback
- Led backend development for tour bookings, user authentication, blogging, and airline reservations

### Coloring-Black-and-White-Photos | [🔗](#)

July 2021

*Used Technologies:* *Tensorflow-keras, openCV*

- Implemented and trained an adversarial model based on the paper of [ChromaGAN](#) that successfully colorizes BnW images by learning perceptual and semantic correlations between color distributions and class features

## PARTICIPATIONS & ACCOMPLISHMENTS

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### Excellence Award, Samsung R&D Institute Bangladesh

Nov 2024

- Received Excellence award for my contribution in *SmartThings Windows* Project development in July-September on the year 2024

### Samsung Software Competency Test - Professional Level Acquired

March 2024

- Monetary award of *40,000 BDT* for passing Samsung's Software Competency Test

### Samsung AI PoC Exhibition 2024 | [Visit](#)

Jan 2024

- Developed and showcased a Proof of Concept for *Underwater Image Enhancement* to over 500 attendees, and securing a *Top Ten* position in the exhibition based on audience voting

### SUST SWE Technovent Capture The Flag

Jan 2023

- Finished the event in 5<sup>th</sup> position among 25 teams

### Leading University CSE Carnival Hackathon

June 2019

- Our team developed a mobile application with some unique features focusing on easy interaction between the students and teachers.

## COMMUNITY LEADERSHIP

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### Class Representative

Jan 2019 – March 2023

*Dept. of CSE, SUST*

- Acted as the key link between students and faculty, communicated student concerns, coordinated class activities, maintained clear communication, and cultivated a positive learning atmosphere

### Creative Executive

Nov 2019 – Dec 2021

*SUST ACM Student Chapter | [Visit](#)*

- Managed multimedia operations for various workshops and effectively represented them on digital platforms

### Team Leader

Apr 2019 – Mar 2019

*LICT SUST Tech Fest 2019*

- Organized and executed the event **Project Showcasing**

## SKILLS

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**Programming Skills:** Solved 1200+ problems on [LeetCode](#), [CodeForces](#), [LightOJ](#), [VJudge](#), [StopStalk](#)

**Languages:** CPP, C, C#, Python, Java, Javascript

**Framework:** Pytorch, .NET, Gstreamer, WebRTC, Django, ReactJS

**Version & Task Management:** GitHub, Gerrit, Jira

## STANDARDIZED TEST SCORES

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**Graduate Record Examinations (GRE):** 302 (Q: 162, V: 140, AW: 3.0)

**Test of English as a Foreign Language (TOEFL):** 91(R:25, L:26, S: 19, W: 21)