

Azwad Fawad Hasan

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EDUCATION

Independent University, Bangladesh (IUB) <i>B.Sc. in Computer Science & Engineering (CSE); CGPA: 3.73/4.00</i> <i>Minor in Management Information Systems (MIS); Cum laude graduate (Top 5%)</i>	Dhaka Jan 2020 – Feb 2025
Pearson Edexcel International Advanced Levels (IAL), Academia <i>Physics, Chemistry, Mathematics; Grade: 3 A</i>	Dhaka Jun 2017 – Jun 2019
Pearson Edexcel International GCSEs (O levels/ IGCSE), Academia <i>Took 8 exams in a single sitting; Grade: 8 A*</i>	Dhaka Jun 2017

PUBLICATIONS

Md Fahad Monir and **Azwad Fawad Hasan**, "Exploring SDN Based Firewall and NAPT: A Comparative Analysis with Iptables and OVS in Mininet," in *Advanced Information Networking and Applications (AINA-2024)*, L. Barolli, Ed. Cham: Springer, 2024, vol. 202, pp. 423-432, doi: https://doi.org/10.1007/978-3-031-57916-5_37.

Md Fahad Monir, **Azwad Fawad Hasan**, Md Mozammel Hoque, Tarem Ahmed, Fabrizio Granelli, "Benchmarking Network Functionality: Performance Evaluation of SDN Controllers on Different Network Functions," 2024 IEEE 100th Vehicular Technology Conference (**VTC2024-Fall**), Washington DC, USA, doi:<https://doi.org/10.1109/VTC2024-Fall63153.2024.10756803>.

Azwad Fawad Hasan, Md Fahad Monir, Md Zoheb Hassan, and Tarem Ahmed, "Resilience of SDN Controllers to DDoS Attacks: A Comparative Study of RYU, ODL, and OVS," 2025 IEEE International Conference on Communications Workshops (**ICC Workshops**), Montreal, Canada, pp. 1420-1425, 2025, doi:<https://doi.org/10.1109/ICCWorkshops67674.2025.11162324>.

Azwad Fawad Hasan and Khorshed Alam, "Experimental Analysis of LTE and 5G Uplink Performance Under Standardized Fading Models Using srsRAN" [**On-going**]

RESEARCH EXPERIENCE

IUB, Dept. Of Computer Science And Engineering Bashundhara, Dhaka
Researcher Assistant (RA) Sept 2022 – Present (currently part-time)

- Implemented and validated **network middleware** (firewalls, load balancers, IDS, NAPT) in **programmable emulated environments** (Mininet, NS-3) under the supervision of **Dr. Tarem Ahmed**. Quantified **packet loss** and **jitter** under diverse **DDoS and P2P attack scenarios**. Identified critical performance bottlenecks crucial for **robust and resilient network design in next-gen telecom infrastructures**
- Designed and evaluated **programmable network test beds** to rigorously benchmark and optimize **Quality of Service (QoS)** under diverse, **software-defined network (SDN)** conditions. Explored their role in **next-generation network architectures** (e.g., **6G, Open RAN**), focusing on dynamic network control and resource orchestration, with contributions leading to three peer-reviewed publications under the mentorship of Senior Lecturer, **Md. Fahad Monir**
- Developed a novel, high-fidelity, **multi-class DDoS dataset** using Mininet-based SDN emulation and *advanced packet generation (Scapy)*. Applied **rigorous feature engineering and machine learning (XGBoost, Random Forest, SMOTE)** for DDoS mitigation, achieving **99.86% accuracy** on custom data and **99.90% on CIC-DDoS2019 validation**, contributing to **intelligent network security, anomaly detection, and data-driven network management**.

INDUSTRY WORK EXPERIENCE

OITS Dhaka Ltd. Dhaka
Full-Stack Engineer November 2025 – Present, Full-time

- Built a compliance-ready onboarding kyc microservice a Fintech app based in Canada for fiat & crypto using FastAPI, OCR-based ID parsing, Kafka streams, and RabbitMQ plus Celery workers—exposing status/webhook APIs with RBAC, audit logs, and idempotent retries for reliable, PII-safe flows.

Maple Service Solution Ltd.
Full-Stack Software Engineer

Uttara, Dhaka
July 2025 – October 2025, Full-time

- Co-developed and shipped a hospital management system for DRS Derma, improving clinical workflows with secure patient timelines, prescription & medicine management, doctor calendars, appointment reminders (print/email/SMS), and high-fidelity medical/billing PDFs—drove end-to-end development, merged 15+ PRs, resolved critical bugs, and ensured role-based access with full audit trails

Aamra Networks Ltd.
Programmer (ERP) - RnD & Pre-Sales

Banani, Dhaka
March 2025 – June 2025, Full-time

- Collaborated in a team of six to develop and optimize critical features across **Aamra group's large-scale ERP system (HR, CRM, SCM, Expenses modules)**. Automated *Yearly Assessment workflows*, enhanced contract management, and improved *HR, BTRC reporting*, increasing data entry efficiency by **21%** and supporting a **10% revenue uplift**. Leveraged *CodeIgniter (PHP), MySQL, JavaScript*, and modern web practices to deliver scalable, high-reliability solutions with proactive bug resolution, robust validation, and smooth data migration.

Aamra Networks Ltd.
Executive (SWE) - RnD & Pre-Sales

Banani, Dhaka
March 2023 – Feb 2025, Full-time

- Engineered a **robust, real-time facial attendance and tracking web application**, integrating *Flask* and *RTSP streams*. Leveraged **advanced AI models** (FaceNet, DeepFace, MTCNN, ONNX Face Detection) achieving **95% accuracy** on large video datasets. Designed a **scalable processing pipeline** (reducing time by **30%**) and a **secure dual-database system** for enhanced operational security.
- Developed "*Infiltra Watch*", a state-of-the-art **AI-powered intruder detection system** for old existing CCTV infrastructure. Achieved **91% accuracy** in real-time intruder detection and implemented a robust alarm system, significantly enhancing **security and preventing property damage** through automated threat response.

SKILLS

Languages: Python, SQL, JavaScript, PHP

Technologies and Libraries: srsRAN, Open5gs, NS-3, Mininet, TensorFlow, PyTorch, Scikit-learn, OpenCV, Flask, Django, Numpy, Redis, Celery, Git, FastAPI, PostgreSQL, NextJS, NestJS, YOLO, iPerf, TypeORM, Prisma, Kafka

Certificates: *Professional Google Cloud Security Engineer, KodeKloud Mastering Generative AI, and more.*

AWARDS & ACHIEVEMENTS

Multiple Dean's List, Honor List, and Vice Chancellor's List Awards(2020-2023): Recognized for consistently high academic achievement throughout my undergraduate studies.

Top Team Finalist, Innovate For Bangladesh 2021: My work on waste recycling during the pandemic was selected as one of the top finalists in the student competition organized by Bangladesh Innovation Conclave.

IUB 100% Merit Scholarship 2020: Got full scholarship for being *Top 5% scorer* of Spring 2020 Admission Test.

The Change Maker Awards 2019: Recognized for one of the *country's best* IGCSE results.

The Daily Star Award 2020, 2018: Recognized for achieving top grades in A-levels and O-levels.

Pearson Edexcel High Achievers Awards 2017: Graduated as the highest ranked student.

LEADERSHIP & SERVICE

IUB Admission & Financial Aid Office
Student On Duty (SOD)

Bashundhara, Dhaka
2021 – 2023, On-Site Part-Time

Private Tutor (Self-Employed)
O-Level and A-Level Students

Mirpur, Dhaka
2019 – 2023, On-Site Part-Time

Paper Reviewer- IEEE ICC 2026