Azwad Fawad Hasan

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Education

Independent University, Bangladesh (IUB) — Dhaka
B.Sc. in Computer Science & Engineering (CSE); ***GPA: 3.73/4.00*** — *Jan 2020 – Sept 2023*
Minor in Management Information Systems (MIS); Cum laude graduate

Pearson Edexcel International Advanced Levels (IAL), Academia — Dhaka
Physics, Chemistry, Mathematics; ***Grade: 3 A*** — *Jun 2017 – Jun 2019*

Pearson Edexcel International GCSEs (O levels/ IGCSE), Academia — Dhaka
Took 8 exams in a single sitting; ***Grade: 8 A**** — *Jun 2017*

Skills

Languages: Python, JavaScript, PHP, SQL, C++;

Technologies and Libraries: Flask, Django, Bootstrap, Streamlit, MySQL, SQLAlchemy, Plotly.js, ApexCharts.js, Git, SVN, Celery, Redis, OpenCV, PyTorch, TensorFlow, Scikit-learn, YOLO, Pandas, Mininet, NS-3, iPerf

Certificates: Professional Google Cloud Security Engineer, KodeKloud Mastering Generative AI

Industry Work Experience

Aamra Networks Ltd. — Banani, Dhaka
Executive (SWE) - RnD & Pre-Sales — *March 2023 – Present, Full-time*

- Engineered a robust facial attendance web application using Flask, integrating RTSP streams for real-time facial recognition and background monitoring. Leveraged advanced facial recognition technologies (FaceNet, DeepFace, Dlib, InsightFace, ARCFace, MTCNN, ONNX Face Detection) to achieve a 95% accuracy rate in identifying individuals within large video datasets. Designed a scalable processing pipeline that reduced processing time by 30% for large video files, extracting time intervals for recognized faces and generating comprehensive analytical graphs.
- Developed "InfiltraWatch," a state-of-the-art AI-powered intruder detection system. Utilized existing CCTV infrastructure to detect intruders in real time with 91% accuracy. Implemented a real-time alarm system to enhance security and prevent property damage.
- Collaborated on the development of CRM and Alead modules within a large-scale ERP system at Aamra Group. Contributed to a team of six developers, delivering optimized solutions. Successfully integrated new features, improving data entry efficiency by 25% and increasing revenue by 10%. Utilized CodeIgniter, MySQL, and other web technologies to build scalable solutions. Created custom data tables for enhanced data tracking and analysis.

Academic Work Experience

IUB, Dept. Of Computer Science And Engineering — Bashundhara, Dhaka
Undergraduate Researcher Assistant (RA) — *Sept 2022 – Present, Hybrid Part-Time*

- Developed and tested network middleware technologies (firewalls, load balancers, IDS, NAPT) to enhance network performance and resilience in simulated environments, including scenarios such as DoS attacks and P2P network simulations, under the supervision of Dr. Tarem Ahmed.
- Created and evaluated network test beds to measure Quality of Service (QoS) under diverse conditions, performing in-depth analysis to optimize network behavior and functionality.
- Engaged in collaborative research on network softwarization, particularly Software-Defined Networking (SDN) and Network Function Virtualization (NFV), under the mentorship of Senior Lecturer, Md. Fahad Monir

IUB Admission & Financial Aid Office — Bashundhara, Dhaka
Student On Duty (SOD) — *2021 – 2023, On-Site Part-Time*

- Provided customer service and administrative support for undergraduate admissions and scholarships, including handling queries, calls, and credit transfer evaluations.

Private Tutor (Self-Employed) — Mirpur, Dhaka
O-Level and A-Level Students — *2019 – 2023, On-Site Part-Time*

- Provided personalized tutoring in Math and Science for O-Level and A-Level students in Bangladesh, helping them achieve academic success.

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/10.1109/VTC2024-Fall63153.2024.10756803.

Md Fahad Monir, **Azwad Fawad Hasan**, Md Mozammal 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 and Zoheb Hasan, Tarem Ahmed *"Resilience of SDN Controllers to DDoS Attacks: A Comparative Study of RYU, ODL, and OVS,"* in WS19 IEEE ICC 2025 Workshop-Security6G (**IEEE ICC-2025**), Montreal, Canada, 2025. [**Accepted**]

Azwad Fawad Hasan, Tarem Ahmed and Md Fahad Monir, *"Enhancing DDoS Attack Detection through Multi-modal Fusion of Features Extracted using Deep Learning and Large Language Models"* [**On-going**]

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.

Projects

Predicting From Images | *GitHub*
- Explored transfer learning techniques using the VGG-16 convolutional neural network architecture on the CIFAR-100 dataset, consisting of 60,000 images across 100 classes.
- Implemented VGG-16 in PyTorch and trained the model both from scratch and using pre-trained ImageNet weights, adjusting the final layers to fit CIFAR-100 classes.
- Applied techniques like freezing convolutional and fully connected layers, comparing performance across different training approaches to enhance model accuracy.

To Do List | *GitHub*
- A minimalistic Django project that incorporates fundamental CRUD operations for functionality, leveraging the integrated SQLite database. Users have the ability to register accounts, manage tasks (creation, editing, deletion), log in, and mark tasks as completed within the platform.

PredictingIncomeClass | *GitHub*
- Developed models to predict income class using the Adult Income dataset from the 1994 Census.
- Applied various machine learning techniques including logistic regression, random forest, SVM, and ensemble models.
- Performed data preprocessing, feature selection, and hyperparameter tuning to improve accuracy.

Air Quality Index | *GitHub*
- A Django-based project that utilizes weather data extracted from a CSV file for conducting data analysis. The project showcases the analysis results through a variety of graphical representations, including heatmaps, district maps of Bangladesh, scatter plots, and line graphs.

Explore More Projects | *GitHub* & *Website*
- Discover all my projects on GitHub or visit my website for more details.

Extra-Curricular Activities

Sub-Executive, IEEE Computer Society IUB Student Branch Chapter *Jul 2021 - Jul 2023*
Managed social media, boosted LinkedIn followers by 50%, and created content strategies.

Edge Ambassador, The Business Standard (TBS) *Aug 2021 - Aug 2022*
Created content, partnered with university clubs, and facilitated TBS and Walton collaborations.