Shartaz Khan Akash

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Education

Bachelor of Science in Computer Engineering *Dhaka, Bangladesh*

American International University-Bangladesh (AIUB) *April 2018 - March 2023*

- **CGPA:** 3.34 | **Credits:** 147
- **Courses:** Data Structure, Computational Statistics and Probability, Algorithms, Object Oriented Programming, Computer Graphics, Operating System, Artificial Intelligence and Expert System, Machine Learning, Human Computer Interaction, Computer Vision and Pattern Recognition, Data Warehousing and Data Mining
- **Undergraduate Project/Thesis Title:** Deep Learning-based Prediction of Football Players' Performance during Penalty Shootout (Watch demo)

Higher Secondary School Certificate (Science) *Dhaka, Bangladesh*

Dhaka Imperial College *2015 - 2017*

Work Experience

Associate *Dhaka, Bangladesh*

Acote Group *Sep 2024 - April 2025*

- Conducted precise dataset annotation and segmentation for machine learning models, ensuring high-quality labeled data to improve algorithm performance and accuracy.
- Performed web scraping using Python, Beautiful Soup, and Selenium to gather and preprocess large-scale datasets from diverse online sources, enhancing data diversity.
- **Technical Skills:** LiDAR Annotation, labelme, AIMMO Data Labeler, Web Scraping (Python, Beautiful Soup, Selenium).

Transmission Controller *Dhaka, Bangladesh*

Green TV *Jul 2024 - Aug 2024*

- Managed broadcasting system and analyzed data for Television Rating Point (TRP) system to generate actionable insights for programming decisions that improved prime-time ratings.

Research Assistant *Dhaka, Bangladesh*

Dr. Anawarul Abedin Institute of Innovation, AIUB *Aug 2022 - Jan 2023*

- Evaluated machine learning models (ResNet, GoogleNet, VGG16, AlexNet) on custom datasets for optimized selection.
- Applied deep learning models on embedded systems like Raspberry Pi and Orange Pi, gaining practical experience in hardware-software integration.
- Analyzed real-world datasets gathered from microcontrollers, microprocessors, and sensors, enhancing skills in data analysis and integration
- **Technical Skills:** Python with PyTorch, NumPy, Matplotlib, Pandas, Scikit-learn, OpenCV, Tensorflow, Ubuntu Linux, Linux tools, Git.

Research and Development Intern *Dhaka, Bangladesh*

Faculty of Engineering, American International University-Bangladesh *May 2022 - July 2022*

- Developed and wrangled a custom dataset, significantly improving machine learning model accuracy and understanding data preprocessing techniques.
- Automated repetitive tasks using Python 3, demonstrating proficiency in programming for efficiency and productivity.

IT and Graphics Designer (Part time) *Dhaka, Bangladesh*

Semiotify *Dec 2021 - May 2023*

- Designed the brand identity and provided IT support to streamline operations and resolve technical issues efficiently.
- **Technical Skills:** Microsoft Office Suite, Adobe Creative Suite.

Skills

Programming	Python (Pandas, PyTorch, NumPy, Scikit-learn, Xgboost, OpenCV, Tensorflow), C++, C#, ASP.NET, Java, HTML Database (Oracle, MySQL), MatLab, R, Weka
Miscellaneous	Linux, Shell (Bash), LATEX(Overleaf/R Markdown), Microsoft Office
Development tools	Anaconda Navigator(Jupyter Notebook, Spyder, etc.), Visual Studio, Virtual Box
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation.

Publications

Conference Papers

Shartaz Khan Akash, D. Chakraborty, M. M. Kaushik, B. S. Babu and M. S. R. Zishan, "Action Recognition Based Real-time Bangla Sign Language Detection and Sentence Formation," 2023 3rd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), Dhaka, Bangladesh, 2023, pp. 311-315, doi: *10.1109/ICREST57604.2023.10070072*

D Chakraborty, MM Kaushik, **Shartaz Khan Akash**, Md. Saniat Rahman Zishan, and MS Mahmud, "Deep Learning-Based Prediction of Football Players Performance During Penalty Shootout," 2023 26th International Conference on Computer and Information Technology (ICCIT), Cox's Bazar, Bangladesh, pp. 1-6, doi: *10.1109/ICCIT60459.2023.10441247*

Projects

Deep Learning-Based Prediction of Football Players Performance During Penalty Shootout *Dhaka, Bangladesh*

American International University-Bangladesh (AIUB)
- Developed a deep learning-based system using YOLOv4, OpenCV, and pose estimation to predict the goalpost region targeted by football players during penalty shootouts.
- Trained an LSTM model on 1560 NumPy files containing 205,920 pose landmarks, achieving 50% test accuracy for kicker action prediction.

Action Recognition Based Real-time Bangla Sign Language Detection and Sentence Formation *Dhaka, Bangladesh*

American International University-Bangladesh (AIUB)
- Developed a real-time Bangla Sign Language (BdSL) detection system to generate Bangla sentences from images or video feeds.
- Used BlazePose for body posture detection and trained an LSTM model with 93.85% training and 87.14% validation accuracy.
- Enabled accurate real-time translation of BdSL gestures into sentences.

Automatic Irrigation System *Dhaka, Bangladesh*

Dr. Anawarul Abedin Institute of Innovation, AIUB
- Built an automatic irrigation system using Arduino and multiple sensors(capacitive soil moisture sensors, temperature sensors, etc.) This device programmed to automatically water plants and collect data for further analysis

Micro Center : A modern shop management system *Dhaka, Bangladesh*

American International University-Bangladesh
- A shop management system using C# .NET with a modern interface and analytic features.

Leadership & Volunteering Activities

Vice Chair *Dhaka, Bangladesh*

IEEE AIUB Student Branch *May 2021 - August 2022*
- Started as a general volunteer in 2019 and progressed to the position of Vice Chairperson.
- Oversaw and managed the technical aspects of branch activities.
- Organized various student-focused events, including seminars, student congresses, and workshops, both online and offline.
- Redesigned the visual identity of the branch to enhance its branding and recognition.
- Contributed to fostering a collaborative environment and providing resources to benefit students.

Committee Member *Virtual*

IEEE Region 10 Young Professionals *Jan 2021 - May 2022*
- Assisted in organizing events, including seminars, student congresses, and workshops, both online and offline.
- Designed the visual identity and created graphic designs to enhance event branding and visibility.

Volunteer *Virtual*

Media & Publicity Team at IEEE Region 10 Student Activities Committee *Jan 2020 - Dec 2020*
- Contributed to organizing events, such as seminars, student congresses, and workshops, in virtual and offline formats.
- Created and designed visual content to promote events effectively.

Honours and Awards

2022	**Vice-Chancellor's Awards**, For being the best project/thesis for the Academic Year 2021-22 from the faculty of engineering	*Dhaka*
2023	**Dean's Award**, For best final year Capstone Project	*Dhaka*

Languages

English	Professional proficiency (IELTS C1)
Bangla	Native proficiency
Hindi	conversational proficiency