NAHIAN SALSABIL

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Research Interest

Autonomous Vehicle Safety Testing, AI for Autonomous Vehicles

Education

University of Virginia *August 2025 – Present*
PhD in Computer Science

Bangladesh University of Engineering and Technology March *2018 – May 2023*
Bachelor of Science in Computer Science and Engineering (CGPA: 3.66/4.00)

Professional Experience

Graduate Research Assistant *August 2025 – Present*
LESS Lab, University of Virginia

Lecturer (on Leave) June *2023 – Present*
Department of Computer Science and Engineering, BRAC University, Dhaka

Research Experiences

- **Nahian Salsabil,** Sebastian Elbaum, *"TRACE: Topology Aware Reconstruction of Accidents in CARLA for AV Evaluation." FSE 2026.*

- **Nahian Salsabil,** J. Saha, Simantika B. Dristi, Nich Phair, Nusrat M. Deepti, Matthew B. Dwyer, Sebastian Elbaum, *"What Survives the Next Model? Benchmarking LLM-Based Techniques Against Single-Prompts."* *Under Submission*

- **Nahian Salsabil,** Dr. Md. Monirul Islam, "*Novel CNN Architecture for Semantic Segmentation of Autonomous Driving Videos***."** *Under Submission*

- **Nahian Salsabil,** Dr. Tanzima Hashem, "*Reinforcement Learning-Based Approach for Planning Green Routes in Road Networks***."** *Under Submission*

Projects

- Autonomous Driving Using Imitation Learning ***Imitation Learning with Resnet18***
  - Used imitation learning for self-driving cars.
  - Used CARLA simulator for data collection as a real-world scenario.
  - Trained the model via behavior cloning.
  - Used minimum training data.
- DhakaAI Vehicle Detection ***Vehicle Detection with YOLOv5 and Efficientdet***

- Benchmark Object detection models used with Dhaka-AI dataset with augmentation and ensembling techniques

- ManageCasa: Apartment Management System ***React | Django | MySQL | CSS***
  - Four separate modules for payment, election-polling, finance, and communication.
  - Payment module is implemented using Stripe API.
  - Rest API is used to communicate with the Django backend.
- IMDB ***Oracle|Django|HTML|CSS|Bootstrap***
  - Developed a web application for CSE216 Database Sessional Course Project.
  - Mimics the most popular and authoritative source for movie, TV and celebrity content.
  - Almost all of the basic functionalities of the original site were implemented.
  - SQL (Oracle) is used rather than Django models as required by the course. Functions and triggers were used.

Technical Skill

Languages : C/C++, Java, Python, Bison/Flex, Javascript, Bash

Frameworks : DjangoREST, ReactJS, Pytorch, Docker, NS3, xv6, Wireshark, Oracle DBMS, LaTeX, Git

Databases : MySQL, PostgreSQL

Libraries : Sklearn, Pandas, Matplotlib, Seaborn

Awards and Achievements

- Received Best Poster Award (Faculty Choice) in UVA Research Symposium 2026.
- Received Best Poster Award (Audience Choice) in UVA Research Symposium 2026.
- Reached the top 10 in both 1st and 2nd leaderboards in DhakaAI: Object Detection Challenge (5 members team)
- Won the Bangladesh Physics Olympiad (National Round, 2014)
- Regional Champion at Bangladesh Mathematical Olympiad, 2015

Leadership and Other Activities

- Batch Representative at BWCSE (Bangladesh Women in Computer Science and Engineering)