Soham Khisa

🌐 Website | ⊙ Github | 🔗 Linkedin | ✉ Email | 🎓 Google Scholar | ▪ +1(667)-431-0613

Research Interest

Machine Learning, Computer Vision; Natural Language Processing; Human-Computer Interaction

Publication and Preprint

- Aunabil Chakma, Aditya Chakma, **Soham Khisa**, Chumui Tripura, Masum Hasan, and Rifat Shahriyar, "ChakmaNMT: A Low-resource Machine Translation On Chakma Language". **Workshop on Asian Translation @EMNLP 2024** [Preprint]

- **Soham Khisa**, Avijoy Chakma, "VaCDA: Variational Contrastive Alignment-based Scalable Human Activity Recognition" **International Conference on Machine Learning and Applications (ICMLA) 2025** [Preprint]

Experience

1. **Graduate Teaching Assistant**   Aug 2025 – Present
   Department of Computer Science and Electrical Engineering, UMBC
   Course: CMSC421 - Principles of Operating Systems
   Responsibilities:

   - Designing and creating assignments

   - Grading assignments

   - Holding office hours for student consultation

2. **Research Assistant (Remote)**   Sept 2023 – May 2025
   Bowie State University, MD
   Advisor: Dr. Avijoy Chakma
   Research: Machine learning in IoT
   Responsibilities:

   - Literature review

   - Data processing and analysis

   - Implementing research ideas

   - Conducting experiments

   - Attending research meetings

   - Contributing to publications

Education

University of Maryland, Baltimore County   Fall 2025 - Present
Doctor of Philosophy in Computer Science

Bangladesh University of Engineering and Technology (BUET)   2018–2023
Bachelor of Science in Computer Science and Engineering
Thesis: Knowledge Graph-Based Categorization of Newspaper Articles in a Newspaper Corpus [Preprint]
Advisor: Dr. Muhammad Masroor Ali

Services

Emergency Reviewer, International Joint Conference on Artificial Intelligence (IJCAI) [PDF]   2025

Projects

- **CNN From Scratch**
  Deep Learning Project
  - **Libraries:** numpy, opencv, matplotlib, tqdm, pandas, pickle, scipy
  - **Architecture:** Convolutional Neural Network (LeNet)
  - Developed a CNN-LeNet architecture from scratch without using any machine learning frameworks like Tensorflow or PyTorch. The model was trained and evaluated on the MNIST dataset.
    [Code]

- **Retinal Disease Classification**
  Deep Learning Project
  - **Frameworks & Libraries:** numpy, matplotlib, pandas, PyTorch
  - **Architecture:** Restricted Boltzmann Machine, Convolutional Neural Network (AlexNet)
  - The project's objective is to use retinal images to recognize and classify various retinal illnesses, including age-related macular degeneration and diabetic retinopathy.
    [Code]

- **Auc-dais**
  Software Development Project
  - **Frameworks & DBMS:** Spring Boot, React, Bootstrap, PostgresSQL
  - This is a web application for an online auction platform system that allows users to list items for auction, and bidders can browse and select the items they wish to bid on.
    [Frontend-Code] [Backend-Code] [Video]

Achievements and Awards

- Technical **Scholarship** by Bangladesh Government (2018-2023) for **outstanding results** in Higher Secondary School.

- Chittagong Hill Tracts Development Board Scholarship in 2021

- Rangamati Hill District Council Scholarship in 2020

- Finalist - MIST Inter-university ICT Innovation Fest, 2021

- Finalist - HackNSU season 3, 2021

Skills

- **Programming Languages:** Python, Java, C, C++, C#, Assembly
- **Machine Learning Frameworks/Libraries:** PyTorch, TensorFlow, NumPy, scikit-learn, Pandas, Keras
- **Database Management:** SQL (Oracle, Postgres, MySQL, SQLite)
- **Software Development:** Django, Spring Boot, React, JavaFX, Bootstrap
- **Version Control:** Git, GitHub
- **Operating Systems:** Linux, Windows, Mac
- **Scripting:** LaTeX, HTML, Shell Script(Linux)

Certification

- **Workshop on AI in Public Health** at CHRF, organized by   June 1, 2024
  Dr. Yogesh Hooda and Dr. Senjuti Saha, supported by the Gates Foundation.
  [Certificate]

- **Deep Learning Specialization** by DeepLearning.AI on Coursera   Oct 30, 2020
  [Certificate]

- **Machine Learning Foundations: A Case Study Approach** by   May 29, 2020
  the University of Washington on Coursera [Certificate]

REFERENCE

- Dr. Avijoy Chakma (Research Advisor)
- Dr. Muhammad Masroor Ali (Undergrad Thesis Advisor)