

Soham Khisa

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RESEARCH INTEREST

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

PUBLICATION AND PREPRINT

- Avijoy Chakma, Aditya Chakma, **Soham Khisa**, Jannatun Noor, Sharifa Sultana, “Re-educated Educated Ones: A Case Study on Chakma Language Revitalization in Chittagong Hill Tracts” **Conference on Human Factors in Computing Systems (CHI) 2026** [[Preprint](#)]
- Aunabil Chakma, Aditya Chakma, Masum Hasan, **Soham Khisa**, Chumui Tripura, and Rifat Shahriyar, “ChakmaNMT: Machine Translation for a Low-Resource and Endangered Language via Transliteration” [[Under review](#)]. [[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:** L^AT_EX, HTML, Shell Script(Linux)

CERTIFICATION

- **Workshop on AI in Public Health** at [CHRF](#), organized by [Dr. Yogesh Hooda](#) and [Dr. Senjuti Saha](#), supported by the [Gates Foundation](#).
[\[Certificate\]](#)

June 1, 2024

- Deep Learning Specialization by DeepLearning.AI on Coursera
[Certificate] Oct 30, 2020
- Machine Learning Foundations: A Case Study Approach by
the University of Washington on Coursera [Certificate] May 29, 2020

REFERENCE

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