

# Soham Khisa

[Website](#) | [Github](#) | [Linkedin](#) | [Email](#) | [Google Scholar](#) | +1(667)-431-0613

## RESEARCH INTEREST

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

## EDUCATION

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**University of Maryland, Baltimore County**  
Doctor of Philosophy in Computer Science

Fall 2025 - Present

**Bangladesh University of Engineering and Technology (BUET)**  
Bachelor of Science in Computer Science and Engineering

2018–2023

Thesis: Knowledge Graph-Based Categorization of Newspaper Articles in a Newspaper Corpus [[Preprint](#)]  
Advisor: Dr. Muhammad Masroor Ali

## EXPERIENCE

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### 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

## PUBLICATION AND PREPRINT

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- Avijoy Chakma, Aditya Chakma, **Soham Khisa**, Jannatun Noor, Sharifa Sultana, “Re-educating Educated Ones: A Case Study on Chakma Language Revitalization in Chittagong Hill Tracts” **Conference on Human Factors in Computing Systems (CHI) 2026** [[Paper](#)]
- 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]** [[Paper](#)]
- **Soham Khisa**, Avijoy Chakma, “VaCDA: Variational Contrastive Alignment-based Scalable Human Activity Recognition” **International Conference on Machine Learning and Applications (ICMLA) 2025** [[Paper](#)]

# SERVICES

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

2025

# PROJECTS

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## • 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

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- 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

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- **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<sup>A</sup>T<sub>E</sub>X, HTML, Shell Script(Linux)

# CERTIFICATION

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- **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

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