Ashim Dahal

(769) 969-5007 | **codeashim@gmail.com** | **ashimdahal.github.io** | Hattiesburg, MS

Relevant Links: **LinkedIn** | **GitHub** | **Google Scholar** | **ORCID**

Languages: Python, C++, SQL, Javascript, HTML, CSS, PHP
Frameworks: PyTorch, Tensorflow, Keras, Open CV, Flask, FAST API, Matplotlib, Pandas, Numpy, Scikit-learn
Technologies: Git, Github, PostgreSQL, REST, Linux, NVIM, High Performance Clusters and Supercomputers

PROFESSIONAL EXPERIENCE

University of Southern Mississippi   **September 2023 - Present**
Undergraduate Research Assistant in Machine Learning   *Hattiesburg, MS*

- AI in Cybersecurity Project: Detecting ZeroDay Attacks
  - Led a team of three undergraduate students in pioneering the detection of previously unidentified zero-day cyber attacks
  - Managed a highly imbalanced dataset of 4.8 million entries with only two anomaly samples
  - Regrouped dataset into 4 parent classes to reduce bias and increase recall by 15% compared to control dataset
  - Demonstrated leadership, expertise in cybersecurity, and mentorship increasing co-workers grade from 3.2 to 3.6
- 3D Computer Vision: Converting single shot 2D image to 3d object
  - Engaged in advanced research with PhD candidates on 2D to 3D object translation with 360-degree views
  - Customizing Stable Diffusion models to hallucinate rear end of 2D object with label generation using the ShapeNetCore dataset in over 150,000 images from 55,000 classes

Data Research Council for Students   **July 2022 - July 2023**
Machine Learning Researcher   *Kathmandu, Nepal*

- Data Literacy Advocacy and Community Services
  - Organized and led 10+ nationwide events promoting data literacy, reaching over 1000 students and fostering a data-driven mindset
  - Taught Python, machine learning, and deep learning to 450+ students across 4 bootcamps, spanning high school to graduate level, equipping them with essential data science skills
  - Publicized a research paper authored during high school, inspiring 550+ fellow high school students to pursue their own research projects and publications, fostering a culture of academic curiosity and exploration [PAPER LINK]
- Natural Language Processing, Research Papers and Projects
  - Developed the first Nepali chatbot in Nepal with 500+ weekly active users, pioneering research on the effectiveness of native language conversation in mental health chatbots [PAPER LINK]
  - Conducted pioneering research on landslide detection using deep learning techniques, achieving an exceptional 99.9% accuracy rate in Nepal, contributing to disaster preparedness efforts

Robotics Association of Nepal   **July 2022 - November 2022**
Research and Development Intern   *Lalitpur, Nepal*

- Devanagari Object Character Recognition Research Project
  - Designed and developed Devanagari Object Character Recognition Convolutional Neural Networks (CNN) with an impressive accuracy exceeding 97%
  - Authored documentation and research findings, accumulating over 340 reads for the project paper [PAPER LINK]
- In-Office Projects Leadership
  - Led in-office tasks including fingerprint matching, object detection systems, and vegetable classification models, achieving over 95% accuracy for projects such as Digital Voting, Robotic Rotten Vegetable Sorter, and Face Recognition Attendance System increasing the organization's audience in showcase events by over 50%
- STEM Education Activism
  - Taught robotics, programming, and scientific method fundamentals using STEM education to 900+ students across three schools in Kathmandu (Kanjirowa High School, Rato Bangla School, and Pragya School)

EDUCATION

University of Southern Mississippi   **August 2023 - Present**

- Bachelor's of Science in Computer and Information Science
  - **GPA: 4.0**, in the President's List
  - ECs: Active participation in: Google Developer Student Club, Robotics Club, Badminton Club, Southern Miss Alumni Association, Nepalese Student Association, Department of Housing and Residence Life