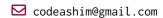
## Ashim Dahal.



**G** Scholar

Github

in Linked In

ashimdahal.github.io

# **Employment History**

2023 – Pres

- **Research Assistant**, University of Southern Mississippi, MS, USA.
  - Spearheaded multiple projects on Computer Vision on Stable Diffusion, Vision Transformer, Visual Question Answering, Convolitional Kolmorogov Networks and Gaussian Splatting.
  - Optimized ML models on 6-gpu multinode HPC cluster, reducing training time by 65%

2022 - 2023

- Machine Learning Researcher, Data Research Council for Students, Kathmandu, Nepal.
  - Designed and delivered ML bootcamps to 200+ students with 92% positive feedback rate
  - Developed 6 Computer Vision tools and endpoints used in 4 hackathons resulting in best local project (Number 1) position in NASA Space Apps 2022

2022 - 2022

- **Research and Development Intern**, Robotics Association of Nepal, Lalitpur, Nepal.
  - Developed 2D vision system achieving 94% object detection accuracy in robotic applications
  - Created the robotics curriculum adopted by 4 high schools, reaching 900+ students

### **Education**

2023 - 2027

■ B.Sc. in Computer and Information Science, University of Southern Mississippi CGPA: 3.92; Academic Excellence Full Tuition and Housing Scholarship

## **Selected Publications**

## **Journal Articles**

A. Dahal, S. Akbar Murad, and N. Rahimi, "Heuristical comparison of vision transformers against convolutional neural networks for semantic segmentation on remote sensing imagery," *IEEE Sensors Journal*, vol. 25, no. 10, pp. 17 364–17 373, 2025. URL (Impact Factor: 4.5).

#### **Peer-Reviewed Conference Publications**

- A. Dahal, S. A. Murad, and N. Rahimi, "Embedding shift dissection on clip: Effects of augmentations on vlm's representation learning," in *Proceedings of the Computer Vision and Pattern Recognition Conference (CVPR) Workshops*, Jun. 2025, pp. 4814–4818. URL.
- A. Dahal, P. Bajgai, and N. Rahimi, "Analysis of zero day attack detection using mlp and xai," in Security and Management and Wireless Networks, Springer Nature Switzerland, 2025, pp. 57–67, ISBN: 978-3-031-86637-1. URL.
- **A. Dahal**, "Would you own a robot?" In Proceedings of the Ninth National Conference on Science and Technology by NAST, Lalitpur, Nepal, 2022. **6** URL.

### Submitted Manuscripts

- **A. Dahal**, A. Ghimire, S. A. Murad, and N. Rahimi, Redemption score: An evaluation framework to rank image captions while redeeming image semantics and language pragmatics, 2025. arXiv: 2505.16180 [cs.CV]. & URL.
- A. Dahal, S. A. Murad, and N. Rahimi, Efficiency bottlenecks of convolutional kolmogorov-arnold networks: A comprehensive scrutiny with imagenet, alexnet, lenet and tabular classification, arXiv e-prints, 2025. URL.
- S. A. Murad, A. Dahal, and N. Rahimi, Eeg-to-text translation: A model for deciphering human brain activity, 2025. arXiv: 2505.13936 [cs.CL]. URL.
- S. A. Murad, A. Dahal, and N. Rahimi, Multi-lingual cyber threat detection in tweets/x using ml, dl, and llm: A comparative analysis, arXiv e-prints, 2025. URL.

# **Creative Projects**

Thislexic An Extended Reality (XR) app that helps dyslexic patients to practice writing using llama cpp

Torchy A PyTorch wrapper that adds functional usage of .train(), validate and other utilities from tensor-flow's pipeline to nn.Module (15 \*\*) and 5 forks)

Jelly A chat-bot that replies to and from Romanized Nepali designed to help mental health patients; a first of its kind (9 \*\* stars and 7 forks)

Frida A climate change super app that summarizes climate change news, predicts landslides based on weather data, hosts events and gives flood alerts based on current location of rivers

# Miscellaneous Experience

### **Invited Talks**

2025 What is an Image?, USM, Hattiesburg, MS, USA. **OURL** 

2023 Using AI in journalism, Federation of Nepali Journalist, Kaski, Nepal. 🔗 URL

Future of AI, Fishtail Academy, Pokhara, Nepal. 🔗 URL

### **Awards and Achievements**

2025 **\$5,500 Summer Research Grant**, Drapeau Center for Undergraduate Research

**\$500 checkpoint**, Awarded by school of business to develop XR application

\$200 Eagles Write Award, Best Visual Analysis School of Humanities, USM

2023-2024 President's List X 2, Awarded for Excellent Performance in Academics

2022 | Global Nominee, NASA Space Apps Challenge & Project Site

## **Community Offices**

2025-Pres Lead Organizer, Google Developers Group (GDG) On Campus

**Research Liaison**, School of CSCE Ambassadors, USM

2024-2025 Head of Artificial Intelligence, Google Developer Students Club at USM

**Founder and President**, Together We Learn

### **Teaching in Bootcamps**

2023 Days Pokhara Machine Learning Bootcamp - 🕤

📕 7 Days Bootcamp on Pragati School – 📢

DRCFS Chitwan Bootcamp –

📕 14 Days Intermediate Python Bootcamp – 😱

2022 📕 30 Days Beginner Python Bootcamp – 🕥

#### **Certifications**

Generative Adversarial Networks Specialization, Deep Learning and Reinforcement Learning, Sequence Models, Machine Learning, Intro to Data Science, Neural Networks and Deep Learning

## **Skills**

Languages Python, C++, C#, sql

ML PyTorch, Open cv, Hugging Face, Accelerate, FastAPI, MatplotLib, Scikit-Learn, Pandas

CompVis Vision Transformers, Vision Language Models, Multimodal Systems, Photogrammetry, Gaussian Splatting, Stable Diffusion, Neural Radiance Fields, Advanced Video Reasoning, Convolutional Kolmogorov Arnold Networks, Image Segmentation and Mono/Stereo Depth Maps

Tools Git, Linux, NVIM, High Performance Computing Clusters (HPCC), Lagrange Tools