

Ashim Dahal

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EDUCATION

University of Southern Mississippi

B.Sc. in Computer Science; CGPA: 3.92; Keystone Honors Scholar

Hattiesburg, MS

2023 – 2027

EMPLOYMENT HISTORY

Research Assistant

University of Southern Mississippi

2023 – Present

MS, USA

- Authored/co-authored 4+ publications (CVPRW, IEEE Sensors J.) by leading projects in Vision Transformers, Video Question Answering, and Dynamic Gaussian Splatting from problem framing to experiments and writing
- Cut training wall-clock by 65% on a 6-GPU, multi-node HPC setup using PyTorch's DDP, mixed precision and gradient accumulation, boosting experiment cadence by 2–3 times
- Partnered with 4 lab researchers in Brain-Computer Interface and Cybersecurity to enable 3 publications

Machine Learning Researcher

Data Research Council for Students

2022 – 2023

Kathmandu, Nepal

- Taught 5 Python/ML bootcamps to 350+ students (**92%** satisfaction)
- Built 6 computer-vision tools and FastAPI endpoints used across 4 hackathons, earning Best Local Project and Global Nominations at NASA Space Apps 2022

SELECTED PUBLICATIONS

Embedding Shift Dissection on CLIP: Effects of Augmentations on VLM's Representation Learning. **CVPR Workshops**, 2025.

Heuristical Comparison of Vision Transformers Against Convolutional Neural Networks for Semantic Segmentation on Remote Sensing Imagery. **IEEE Sensors Journal (IF:4.5)**, 2025.

CREATIVE PROJECTS

Thislexic | *Python, Llama.cpp, Grounding DINO, HuggingFace*

- An Extended Reality (XR) app that helps dyslexic patients to practice writing using Grounding DINO and Llama.cpp

Torchy | *PyTorch, Python*

- A PyTorch wrapper that adds functional utilities from tensorflow's pipeline to nn.Module (15 stars and 5 forks)

AWARDS AND LEADERSHIP

Lead Organizer – Google Developers Group (GDG) On Campus

2025–Present

Research Liaison – School of CSCE Student Ambassadors

2025–Present

Head of Artificial Intelligence – Google Developer Students Club (GDSC) at USM

2024–2025

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

2025

\$500 Hatchery Checkpoint – Funded to build XR application for dyslexia

2024

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

2024

TECHNICAL SKILLS

Languages: Python, C++, C#, SQL

ML: PyTorch, Distributed Data Parallel (DDP), CUDA, Hugging Face, Accelerate, FastAPI, Matplotlib, Scikit-Learn, Pandas

Computer Vision: Vision Transformers, Dynamic Gaussian Splatting, Large Vision-Language Models, Multimodal Systems, Stable Diffusion, Neural Radiance Fields, Video Question Answering, Image Segmentation, Photogrammetry

Tools: Linux, Git, NVIM, High Performance Computing Clusters (HPCC), \LaTeX