

# Ashim Dahal.

✉ codeashim@gmail.com




🎓 Scholar

🐙 Github


🌐 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, Convolutional Kolmogorov 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

- 1 **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

- 1 **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](#).
- 2 **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](#).
- 3 **A. Dahal**, “Would you own a robot?” In *Proceedings of the Ninth National Conference on Science and Technology by NAST*, Lalitpur, Nepal, 2022.  [URL](#).

### Submitted Manuscripts







- 1 **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](#).
- 2 **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](#).
- 3 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](#).
- 4 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.  [URL](#)
- 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
- 2024  **\$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
- 2022-2023  **Founder and President**, Together We Learn





### Teaching in Bootcamps

- 2023  7 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

- 2020-2021  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),  $\text{\LaTeX}$