

# Ashim Dahal.

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🎓 Scholar

🐙 Github

🌐 Linked In

🌐 ashimdahal.github.io

## Employment History

- 2023 – Pres     **Research Assistant**, University of Southern Mississippi, MS, USA.
- Led multiple projects on Computer Vision on Stable Diffusion, Vision Transformer, Visual Question Answering, Convolutional Kolmogorov Networks and so on.
  - Optimized ML models on 6-gpu multinode HPC cluster, reducing training time by 65%
- 2022 – 2023     **Machine Learning Consultant**, 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: 3.94; Major GPA: 4.0; Academic Excellence Full Tuition and Housing Award

## Research Publications

### Journal Articles

- 1 **A. Dahal**, S. A. Murad, and N. Rahimi, "Heuristical Comparison of Vision Transformers Against Convolutional Neural Networks for Semantic Segmentation on Remote Sensing Imagery," *IEEE Sensors Journal (In Press)*, 2025. [🔗 URL](#) (Impact Factor: 4.3).

### 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 *Mechanistic Interpretability for Vision at CVPR (Proceedings Track)*, 2025. [🔗 URL](#).
- 2 **A. Dahal**, P. Bajgai, and N. Rahimi, "Analysis of zero day attack detection using mlp and xai," in *Proceedings of International Conference on Security and Management (Springer Nature) in press*, Las Vegas, USA, 2024. [🔗 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**, 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](#).
- 2 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](#).

### Preprints







- 1 **A. Dahal** and S. Kattel, "Predicting handwritten devanagari characters using modified-lenet model architecture," Preprint: 400+ reads, oct 2022. [🔗 URL](#).
- 2 **A. Dahal**, "Do you "go big or go home" with neural networks?" Preprint: 200+ reads, 2022. [🔗 URL](#).
- 3 **A. Dahal**, A. Khadka, B. Kharal, and A. Shah, "Effectiveness of native language for conversational bots," Preprint: 500+ reads, 2022. [🔗 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





### Awards and Achievements

- 2025  **\$4,000 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](#)











### 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](#)







### Community Offices

- 2025-Pres  **Research Liaison**, School of CSCE Ambassadors, USM
- 2024-Pres  **Head of Artificial Intelligence**, Google Developer Students Club at USM
- 2022-2023  **Founder and President**, Together We Learn
- 2021-2022  **IT Head**, The English Society



### 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 – 

### Certification



- 2021  **Generative Adversarial Networks Specialization**. Awarded by DeepLearning.AI
-  **Deep Learning and Reinforcement Learning**. Awarded by IBM
-  **Sequence Models**. Awarded by DeepLearning.AI
- 2020  **Machine Learning**. Awarded by Stanford Online
-  **Introduction to Data Science**. Awarded by University of Michigan
-  **Neural Networks and Deep Learning**. Awarded by DeepLearning.AI

## Skills

- Languages  Python, C++, C#, SQL
- Databases  MySQL, PostgreSQL, SQLite

## Skills (continued)

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ML       PyTorch, Open cv, Hugging Face, Accelerate, FastAPI, Matplotlib, Scikit-Learn, Pandas  
Tools       Git, Linux, NVIM, High Performance Computing Clusters (HPCC),  $\LaTeX$


## References

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### Dr. Nick Rahimi

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