

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 *Security and Management and Wireless Networks*, Springer Nature Switzerland, 2025, pp. 57–67, ISBN: 978-3-031-86637-1.
- 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  **\$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](#)











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

Dr. Nick Rahimi

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