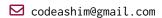
## Ashim Dahal.



**G** Scholar

Github

in 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, Convolitional Kolmorogov 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**

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. 

\*\*OURL (Impact Factor: 4.3).

## **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 *Mechanistic Interpretability for Vision at CVPR (Proceedings Track)*, 2025. URL.
- 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.
- A. Dahal, "Would you own a robot?" In Proceedings of the Ninth National Conference on Science and Technology by NAST, Lalitpur, Nepal, 2022. OURL.

### **Submitted Manuscripts**

- **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, Multi-lingual cyber threat detection in tweets/x using ml, dl, and llm: A comparative analysis, arXiv e-prints, 2025. URL.

#### **Preprints**

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

# **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**

\$4,000 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

## **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

## **Community Offices**

2025-Pres Research Liaison, School of CSCE Ambassadors, USM

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

**Founder and President**, Together We Learn

2021-2022 | IT Head, The English Society

## **Teaching in Bootcamps**

2023 A 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)**

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

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

# References

## Dr. Nick Rahimi

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