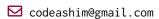
## Ashim Dahal.



Github

in Linked In

**G** Google Scholar

# **Employment History**

2023 – Pres

- **Research Assistant**, University of Southern Mississippi, MS, USA.
  - Led 3 research projects in Computer Vision using Vision Transformers, Kolmogorov Arnold Representations and Stable Diffusion, achieving 84% mIoU, 90% accuracy and strong fidelity on novel datasets
  - 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 robotics curriculum adopted by 4 high schools, reaching 900+ students.

## **Education**

2023 - 2027

**B.Sc. in Computer and Information Science, University of Southern Mississippi** Involvements: Research, Google Developers Student Club, The Nations Student Association, Nepalese Student Association.

### **Research Publications**

#### **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," *arXiv e-prints*, Nov. 2024. **OURL**.

### **Conference Proceedings**

- **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.
- **A. Dahal**, "Would you own a robot?" In Proceedings of the Ninth National Conference on Science and Technology by NAST, Lalitpur, Nepal, 2022. **OURL**.

### **Preprint Articles**

- **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 tensorflow's pipeline to nn.Module (15 \*\* and 5 forks) \*\* 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 (8 \*\*\* 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

### **Community Offices**

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

2022-2023 Founder and President, Together We Learn.

#### **Awards and Achievements**

**\$500 checkpoint**, Awarded by school of business to develop XR application.

Computing Research Association Undergraduate Researcher Award, Nominee from USM.

**\$200 Eagles Write Best Visual Analysis**, Placed 1 out of all students who took course ENG 101 (est: 710+), 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

### Certification

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

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

Tools Git, Linux, NVIM, High Performance Clusters (HPC), LaTeX

## References

#### Dr. Nick Rahimi

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