

Atharva Tendle

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Education

University of Nebraska-Lincoln

Lincoln, NE

Master of Science in Computer Science GPA: 4.0/4.0

Aug 2019 - May 2021

Bachelor of Science in Computer Science and Economics GPA: 3.91/4.0

Aug 2015 - May 2019

Experience

Researcher

May 2020 – Present

Manifold Computing

Remote

- Working on problems like interpretable deep learning and meta-learning for multimodal datasets.
- Co-lead a research project involving interpreting gradient changes in convolutional networks for image classification that was published at the NewInML workshop at NeurIPS 2020.
- Working on a research idea involving modular meta-learning applied to multi-modal datasets that was published at the Pre-Register Workshop at NeurIPS 2020.

Deep Learning Research Assistant

Dec 2019 – Present

Network-Centric and data-driven learning group (UNL)

Lincoln, NE

- Leading a deep learning research project that aims to improve the labeling process of camera-trap datasets like Snapshot Serengeti.
- Created a self-supervised transfer learning framework that is able to beat state-of-the-art results on the Snapshot Serengeti Dataset.
- Improved classification performance from 93.5% - 94.5% while maintaining a 50% reduction in training time.

Data Science Intern

May 2020 – Aug 2020

Hudl: Applied Machine Learning

Lincoln, NE

- Worked on improving Multi-Object Tracking using state-of-the-art deep learning frameworks like Detectron2 and DeepSort.
- Augmented the object detection framework with an efficient data processing pipeline that allowed for faster training on massive datasets.
- Executed massive training jobs using our custom object detection framework that improved our baseline detection results from 90% - 92%

Machine Learning Intern

May 2019 – Aug 2019

Computational Architecture Research Lab

Lincoln, NE

- Assisted in solving a computer vision task involving satellite image.
- Create a deep-learning framework that utilized transfer learning and data augmentation to beat baseline results and leveraged Gram Matrices for improving the interpretability of the framework.
- Performed interpretability analysis and generated optimal results that led to a publication at eCAADe 2020.

Technical Skills

Languages: Python, Java, C/C++, JavaScript, SQL, HTML/CSS

Frameworks: PyTorch, TensorFlow, Keras, PyTorch-Lightning

Developer Tools: Git, AWS Sagemaker, VS Code, Jupyter

Libraries: Pandas, NumPy, Matplotlib, Scikit-Learn, OpenCV

Publications

- Ayush Manish Agrawal, Atharva A. Tendle, Harshvardhan D. Sikka, Sahib Singh, Amr Kayid. *Investigating Learning in Deep Neural Networks using Layer-Wise Weight Change*. Computing Conference 2021.
- Ayush Manish Agrawal, Atharva A. Tendle, Harshvardhan D. Sikka, Sahib Singh, Amr Kayid. *Investigating Learning in Deep Neural Networks using Layer-Wise Weight Change*. In Advances in Neural Information Processing Systems (NIPS) NewInML Workshop 2020.
- Harshvardhan D. Sikka, Atharva A. Tendle, Amr Kayid. *Multimodal Modular Meta-Learning*. In Advances in Neural Information Processing Systems (NIPS) Pre-Register Workshop 2020.
- D. Newton, D. Piatkowski, W. Marshall, A. Tendle, *Deep Learning Methods for Urban Analysis and Health Estimation of Obesity*. eCAADe 2020.

Teaching Experience

Deep Learning | Graduate Teaching Assistant

Jan 2021 – May 2021

- Held office hours to discuss theoretical concepts related to deep learning and helped them understand TensorFlow 2.0.
- Advised students on projects and handled assignment grading.

Machine Learning | Graduate Teaching Assistant

Aug 2020 – Dec 2020

- Gave a lecture on basics of Python programming for Machine Learning.
- Co-created assignments and labs.
- Held recitation sessions every week which involved teaching concepts and their code implementations.
- Advised students on projects and handled assignment grading.

Data Analysis and Modelling | Graduate Teaching Assistant

Jan 2020 – May 2020

- Gave a lecture on basics of Python programming for Data Modelling.
- Co-created assignments and labs.
- Advised students on projects and handled assignment grading.

Projects

Deep Reinforcement Learning Nanodegree Projects | Python, PyTorch, Unity

- Implemented several deep reinforcement learning algorithms using PyTorch and Unity to solve problems that include Navigation, Control and Competition

Deep Learning Nanodegree Projects | Python, PyTorch, OpenCV, AWS Sagemaker

- Implemented several Deep Neural Networks using PyTorch to solve problems that include Regression, Image Classification, Sentiment Analysis

Deep Parkour | Python, TensorFlow, OpenAI PPO, OpenAI gym

- Attempted to train a humanoid agent to perform parkour on an obstacle course using OpenAI's PPO algorithm and TensorFlow

Certifications

Deep Reinforcement Learning Nanodegree Udacity 2020

Deep Learning Specialization by DeepLearning.ai Coursera 2020

Deep Learning Nanodegree Udacity 2019

Machine Learning by Stanford Coursera 2019

Honors and Awards

- Full tuition scholarship and assistantship for M.Sc. at the University of Nebraska-Lincoln
- Graduated with High Distinction (Magna Cum Laude) in Computer Science and Economics from the University of Nebraska-Lincoln.
- Global Laureate Scholarship for B.Sc. at the University of Nebraska-Lincoln