

Akshay Kale

Artificial Intelligence | Data Science | Research

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EDUCATION

PH.D. CANDIDATE

ARTIFICIAL INTELLIGENCE,
UNO

August 2019 - Present

MASTER OF SCIENCE

COMPUTER SCIENCE,
UNO

August 2016 - May 2019

SKILLS

LANGUAGES

Python • R • Java • Javascript
Java • MLflow • LaTeX • C

TOOLS AND FRAMEWORKS

SkLearn • PyTorch • Keras Tensorflow
GGplot • Plotly • Seaborn
SQL • MongoDB
Matplotlib • Git • Unix
Vim • Jupyter Notebook

COURSEWORK

GRADUATE

Deep Learning
Statistical and Machine Learning
Data Structures and Algorithms
Statistics
Data Storytelling
Database Management

AWARDS

Best Visualization, Datapalooza 2019
Best Speaker, PIIT, India
Research Scholarship, UNO
Advantage Scholarship, UNO

SUMMARY

- 5+ years of experience in machine learning modeling with publications
- Academic research focused on explainable artificial intelligence
- Expected Ph.D. graduation May 2024

TRANSFERABLE SKILL

Machine Learning Engineer – UNIVERSITY OF NEBRASKA (UNO)

January 2017 - Present

- Trained machine learning models with 98% accuracy, an improvement by 10% in comparison to state-of-the-art, in structural health monitoring
- Collaborated with engineers, bridge managers, and researchers to develop and implement machine learning and deep learning models for prediction of bridge maintenance, resulting in 3 research publications and other ongoing work
- Created web crawlers for scraping environment, population, and inspection records resulting in a collection of over 21 million records
- Communicated results analysis through interactive visualizations, written reports, publications, and presentations

SELECTED PROJECTS

Frame-forecast

DEEP LEARNING | TENSORFLOW | PYTHON

- Trained a Deep Learning AutoEncoder to predict the future sequence of frames in a public moving MNIST dataset of over 1,000 images with 95% accuracy

CoRA

DATA SCIENCE | D3.JS | JAVASCRIPT

- Developed an interactive Forced Directed Network Graph visualization to identify fallen World War II soldiers from their remains

Tic-Tac-Toe

REINFORCEMENT LEARNING | Q-LEARNING | PYTHON

- A Q-Learning program that improves at playing tic-tac-toe as it plays with human

TOP THREE PUBLICATION

- Ramsey A, [Kale A](#), Kassa Y, Ricks B, Gandhi R. *Toward Interactive Visualizations for Explaining Machine Learning Models*. Proceedings of the Information Systems for Crisis Response and Management Conference, Omaha, NE, USA. 2023. – [Link](#)
- [Kale A](#), Kassa Y, Ricks B, Gandhi R. *A Comparative Assessment of Bridge Deck Wearing Surfaces: Performance, Deterioration, and Maintenance*. Applied Sciences. 2023; 13(19):10883.
- [Kale A](#), Ricks B, and Gandhi R. *New measure to understand and compare bridge conditions based on inspections time-series data*. Journal of Infrastructure Systems 27.4 (2021): 04021037.