

Aditya Karlekar

github.com/akarr24 | www.linkedin.com/in/aditya-karlekar | adityakarlekar231@gmail.com | www.adityakarlekar.com

Gainesville, FL, USA | (+1) 352-328-2740

EDUCATION

University of Florida, Gainesville Aug 2021

Master of Science, Computer Science GPA: 3.62/4.00

Relevant Coursework: Pattern Recognition, Machine Learning, Computer Vision, Algorithms

Rajiv Gandhi Technical University, India Jun 2017

Bachelor of Engineering, Computer Science GPA - 7.91/10.00

Microsoft Professional Program in Data Science Sep 2017

- A year-long professional program from Microsoft to train people for Data Science and Machine Learning Role.

SKILLS

Languages: Python, C++, R, JavaScript, SQL, Matlab

Databases and Tools: Spark, Hadoop, React, MySQL, Tableau, D3js, Git, AWS, Azure, NoSQL (MongoDB), Jupyter

Machine Learning Libraries: Numpy, Scipy, Sci-kit Learn, Pandas, TensorFlow, Keras, Pytorch, Matplotlib, OpenCV

Systems: Unix, Linux, Windows

EXPERIENCE

Graduate Research Assistant (Part-time), Florida Institute for Cyber Security, UF, Gainesville, FL Nov 2020 – Present

- Designing algorithms to make Machine Learning systems tolerant to adversarial attacks.

Data Analyst Intern (full-time), Apilation.ai, Allen, TX Jun 2020 – Aug 2020

- **Data Consolidation:** Designed, build, and tested NoSQL aggregation pipelines of consumption data for a top 5 beverage firm in an agile environment and saved manual audit 600 hours. Developed predictive models using H2O and generated visualizations.

Research Assistant (full-time), Indian Institute of Information Technology, Jabalpur, India May 2018 – Aug 2019

- **Non-Linear Clustering:** Independently developed novel clustering algorithms using divergences like Jeffreys's and S-divergence with Python and showcased their efficacy on various artificial and real-life dataset against well-known clustering algorithms like k-means, fuzzy k-means, hierarchical clustering, and weighted k-means.
- **SoyNet:** Developed a Deep Neural Network with Keras to identify 14 unique diseases in Soybean leaf. Designed an Image processing module in Matlab to filter noise from leaf image. Achieved test accuracy of 98%.

PROJECTS

- **Face Recognition:** Implemented a face recognition system using One-shot Learning. Implemented Siamese Networks with Pytorch and achieved 89% test accuracy.
- **K-Means Visualizer:** Developed a web application to visualize K-means algorithms using D3js, JavaScript, HTML/CSS.
- **Voice User Interface:** Developed a Deep Learning based system consisting of CNNs and bidirectional RNNs to convert raw audio into written transcription using Keras.
- **Machine Translation:** Developed a Deep Neural Nets based system consisting of multi-directional RNNs and Time Distributed Layers to convert English text to French using Pytorch.
- **Image Captioning:** Developed a consisting of CNNs and LSTMs to generate caption describing the image using Keras.
- **Landmark Detection:** Implemented SLAM Algorithm for evaluating landmark position in a two-dimensional world.
- **Game Playing Intelligent Agent:** Developed an agent with Python using Monte Carlo Tree Search to play a game named "isolation" and evaluated its effectiveness against other AI methods like minimax optimization and alpha-beta search.
- **Facial Key Point Detection:** Designed system with Pytorch to detect facial features like eyes, nose and mouth using Deep Neural Networks and contrasted its efficacy against Haar Cascade Face Detector.
- **Smart Cab:** Applied reinforcement learning techniques to train a self-driving agent to traverse across the road grid within specific time in a 2D world.
- **Customer Segments:** Applied various clustering algorithms on unstructured data to extrapolate pattern and natural categories. Checked these predictions against the ground truth and evaluated the results empirically.
- **Student Repayment Rate:** Designed a regression model to predict the Repayment rate using Microsoft Azure Machine Learning and deployed the model on the Azure cloud.

PUBLICATIONS

- A Karlekar, A. Seal, O. Krejcar, C. G. Martin, **Fuzzy K-Means with Non-Linear S-divergence**, IEEE Access, May 2019
- A Karlekar, A. Seal, O. Krejcar, C. G. Martin, **Fuzzy C-Means using Jeffrey's based Similarity Measure**, Journal of Soft Computing, Elsevier, Jan 2020.
- A. Karlekar, A. Seal, **SoyNet: Soybean Leaf Diseases Classification**, Journal of Computers and Electronics in Agriculture, Elsevier, Mar 2020.