Akshay Krishna

2875 Markridge Drive, Reno, NV 89509 | akshay.krishna@nevada.unr.edu | +1 (531) 203-6554
GitHub:github.com/saberzuko | Website: akshaykrishna.xyz | LinkedIn: akshay-krishna-ak | Google Scholar: akshay-krishna

STATEMENT

I am a highly motivated and hard-working individual interested in building a career in Computer Vision and Image Processing. My eventual goal is to establish a good network and rapport with those of similar interests and work in an establishment that continuously challenges me. I want to work in a place that will continually enhance my skills and play a vital role in the organization's development.

EDUCATION

M.S. student at University of Nevada, Reno *M.S. in Computer Science and* *M.S. in Statistics & Data Science*	 GPA – 4.0	 **Fall 2020** **Spring 2021**
Ph.D. student in University of Nebraska Medical Centre	GPA – 3.6	**Fall 2019 - Spring 2020**
B.E. in Electronics and Communication at Visvesvaraya Technological University	GPA – 3.71	**Jul 2019**

RESEARCH INTERESTS: Computer-Vision, Deep-Learning, Machine-Learning, Image Processing, Statistics, Data Science

TECHNICAL SKILLS & PACKAGES: C++, Keras, PyTorch, Tensorflow, OpenCV, Python, Linux, NumPy, Scikit-Image

INTERNSHIP

***Intern,* NeenOpal Intelligent Solutions Pvt. Ltd.** **Aug 2018**

A company providing solutions to improve market & business strategies, with $1.2 Mn revenue and 20 employees.

- Performed feature engineering related to sales forecast for a client in Sri Lanka using Python 3.6 & Pandas; automated process of extracting weather data from different websites like accuweather.com and wundergorund.com. Gained insights into building predictive models for sales forecasting and improving accuracy.

EXPERIENCE

GRADUATE ASSISTANT – Dept. of Mining & Metallurgical Engg, UNR **Summer 2021**

Developing a mobile application to incorporate the terrestrial changes in mining areas, track the user's location, and navigate them to a safe location during the time of emergencies.

TEACHING ASSISTANT – Dept. of Mathematics & Statistics, UNR **Fall 2020**

Teaching assistant to a class of 126 students for the subject MATH-126 Pre-Calculus I.

PROJECTS & RESEARCH EXPERIENCE

Automated Golfball Detection and Tracking (Reference: GitHub & LinkedIn) **Feb 2021**

Developed a system that detects the green region where the player is putting the golf ball, tracks the golf ball, detects the hole, and calculates metrics like the velocity of the ball, shot angle, and whether the ball made the hole or not.
Technologies/Frameworks: Python, OpenCV, scikit-image, connected component analysis, background subtraction, contour detection, Frame Difference tracking, Hu-moments, Homography transform,

Object Detection using Histogram of Oriented Gradients (Reference: GitHub) **Jan 2021**

Built a custom object detection algorithm using Image pyramids, Histogram of Oriented Gradient (HOG) descriptors, and Support Vector Machines to detect a single object present in the image.
Technologies/Frameworks: Python, OpenCV, scikit-image, HOG descriptors, SVM, Image Pyramids, Non-maxima suppression

Custom Machine Learning Algorithms (Reference: GitHub) **Dec 2020**

Developed Machine Learning algorithms like Decision Trees, K-Means Clustering, K-Nearest Neighbors, Principal Component Analysis from scratch with the help of packages Numpy, Scipy, and random. No other libraries were used to implement the algorithms.
Technologies/Frameworks: Python, NumPy, SciPy, random

Automatic Number Plate Recognition (Reference: GitHub) **Nov 2020**

Implemented a system that localizes the license plates of cars, segments the characters on the license plates, and performs image classification on each character for its recognition.
Technologies/Frameworks: Python, OpenCV, scikit-image, SVM, Morphological Operations, Otsu's Thresholding, Contour Detection, homography transformation, Connected Component Analysis

Automatic Detection of Helmetless Riders using Deep Learning (Reference: Youtube) **Jun 2019**

Developed a system to automate the process of detecting two-wheeler riders without helmets and extracting their license plate numbers using OCR on the Indian traffic data.
Technologies/Frameworks: Python, OpenCV, YOLO v3, Keras, Tensorflow, Fast R-CNN, Otsu's Thresholding, Contour Detection

PAPER PUBLICATIONS

- **Akshay Krishna**, Akhilesh V, Animikh Aich, Chetana Hegde. "**Analysis of Customer Opinion using Machine Learning and NLP Techniques**". International Journal of Advanced Studies of Scientific Research, Vol 3 No. 9, 2018.
- **Akshay Krishna**, Animikh Aich, Akhilesh V, Chetana Hegde. "**Sales Forecasting of Retail Stores using Machine Learning Techniques**". 2018 3rd International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS), pages 160-166, IEEE, 2018.
- **Akshay Krishna**, Akhilesh V, Animikh Aich, Chetana Hegde. "**Sentiment Analysis of Restaurant Reviews using Machine Learning Techniques**". Emerging Research in Electronics, Computer Science and Technology, pages 687-696, Springer Singapore, 2019.
- Animikh Aich, **Akshay Krishna**, Akhilesh V, Chetana Hegde. "**Preprocessing Web-based Data using Huffman Encoding for Efficient Storage in Machine Learning Applications**". International Conference on Information Processing (ICInPro 2019).
- Animikh Aich, **Akshay Krishna**, Akhilesh V, Kumari Akanksha, Vipula Singh. "**Automatic Detection of Helmetless Riders using Deep Learning**". (Manuscript under preparation)
- **Akshay Krishna,** Patrick Smith, Mircea Nicolescu, Steve C Hayes. **"Vision-based Assessment of Instructional Content on Golf Performance"** (Paper submitted Awaiting acceptance)

PAPER PRESENTATIONS

- Presented paper on "Analysis of Customer Opinions using Machine Learning and NLP Techniques" at the International Conference on Cyber Security, Oct 2018.
- Presented paper on "Sales Forecasting for Retail Stores using Machine Learning Techniques" at the 3rd International Conference on Computational Systems & Information Technology for Sustainable Solutions, Dec 2018.
- Presented paper on "Sentiment Analysis of Restaurant Reviews using Machine Learning Techniques" at the International Conference on Emerging Research in Electronics, Computer Science and Technology, Aug 2018

CERTIFICATIONS

- PyImage Gurus Computer Vision (Sep 2020); Data Mining (Mar 2018); Machine Learning (Oct 2018) NPTEL (National Programme on Technology Enhanced Learning), India

WORKSHOPS CONDUCTED

- Conducted a 2-day workshop on Basics of Image Processing using Python for 60 students, Mar 2019.
- Conducted a 2-day workshop on Introduction to ML and its Application for 55 students, Oct 2018.
- Conducted a 3-day workshop on Basics of Machine Learning using Python for 55 students, Apr 2018.
- Conducted a 5-day workshop on Basics of Python, Web Scraping & Introduction to AI for 60 students, Apr 2018.
- Conducted a 2-day workshop on Sensors & Arduino and Construction of Common Bots for 60 students, Oct 2017.

ACHIEVEMENTS

- Awarded Best Paper for "Sentiment Analysis of Restaurant Reviews using ML Techniques" among 90 at International Conference on Emerging Research in Electronics, Computer Science & Technology, Aug 2018.
- Ranked among top 5% in Data mining among 820 and Introduction to Machine Learning among 3147 certification courses offered by NPTEL, Mar 2018 & Oct 2018.
- Awarded best project for Automatic Detection of Helmetless Rider using Deep Learning among 1100 at BITES – Xcelerator Student Project Awards, Jun 2019.
- Received Best Outgoing Student – 2019 from RNS Institute of Technology, Bangalore among 200 other students, Jun 2019
- Received a Letter of Appreciation from the Head of the Department, Electronics & Communication, RNS Institute of Technology for my contribution to the Institution.