Akshay Krishna

2875 Markridge Dr, Reno, NV, 89509

Phone: (+1) 531 203-6554
Email: akshay.krishna@nevada.unr.edu
LinkedIn: akshay-krishna-ak
GitHub: saberzuko
Google Scholar: Akshay Krishna
Website: akshaykrishna.xyz

Education

- 2020-Present University of Nevada Reno - Reno, NV
  M.S. Computer Science
  M.S. Statistics & Data Science
  (GPA - 4.0)

- 2019-2020 University of Nebraska Medical Center - Omaha, NE
  Ph.D student, Bio-Informatics
  (GPA - 3.6)

- 2015-2019 Visvesvaraya Technological University - Bangalore, IN
  B.E. Electronics & Communication
  (GPA - 3.7)

Programming Languages

Python	C++
Bash	R

Packages

Tensorflow	PyTorch
OpenCV	Scikit-Image
NumPy	Keras

Course Work

Image Processing	Machine Learning
Analysis of Algorithms	Deep Learning
Multivariate Data Analysis	Operating Systems
Applied Regression Analysis	

Experience

Graduate Teaching Assistant | University of Nevada Reno | Aug 2021 - Present
Graduate Teaching Assistant for Elements of Research Computing course
- Responsible for grading assignments, class participation, and exams
- Managing course content through online Learning Management Systems
- Providing students with one-on-one tutoring and regular out of class assistance

Graduate Assistant | University of Nevada Reno | Jun 2021 - Aug 2021
Graduate Assistant for Dept. of Mining & Metallurgical Engg, UNR
- Development of an Android mobile application for emergency evacuation in mine sites
- Integrated a system for designing custom roads and incorporating custom google mosaic tiles on the application
- Incorporated an algorithm to provide turn-to-turn voice and visual navigation on the custom roads using the ArcGIS platform

Graduate Research Assistant | University of Nebraska Medical Center | Aug 2019 - Jul 2020
Graduate Research Assistant for Bio-Informatics & System Biology core, UNMC
- Development of a statistical system to upsample the HiC maps to get a better understanding of the 3D chromatin organization
- Responsible for designing bash scripts to perform data analysis of gene data and generate computational graphs

Data Engineering Intern | NeenOpal Intelligent Sol. - Bangalore, India | May 2018 - Aug 2018
- Responsible for performing feature engineering for sales forecasting for a client in Sri Lanka
- Development of an algorithm to automate the process of extracting weather data from different websites
- Assisted in building predictive models for sales forecasting and attempt to improve the accuracy of the models

Projects

American Sign Language Translation and Production - Ongoing Thesis Project
- Responsible for developing a Deep Learning-based algorithm to translate sentence level sign language to text and also responsible for producing sign videos from spoken language sentences
- Going through the current research work to understand the implementation of existing models

Golfball Detection and Tracking (Github | LinkedIn)
- Developed a system to detect the green region where the player is putting, track the golf ball, detects the hole, and calculates metrics like velocity and shot angle
- Implemented color-based segmentation to detect the green region, background subtraction, and Hu-moments to detect and track the golfball and applied homography transformation to get a bird's eye view of the green putt, to convert pixel coordinates to real-world coordinates

Automatic Number Plate Recognition (Github)
- Developed a system to localize the number plates of cars and perform OCR to extract and recognise the characters
- Implemented morphological transformation and Otsu's thresholding to detect the license plate in the image. Utilized connected component analysis, segmentation, and Hu-moments to identify the characters in the license plate
- Implemented block binary pixel sum as a feature descriptor for the characters and applied SVM on these features for character recognition

Automatic Detection of Helmetless Riders using Deep Learning (YouTube)
- Developed a system to detect two-wheeler riders without a helmet and identify their number plates to extract the characters using OCR on Indian traffic data
- Implemented YOLOv3 to identify two-wheelers and people. Developed a custom detection algorithm to identify the head portion of the rider to classify the presence of a helmet or not
- Performed transfer-learning on FastR-CNN to localize the license plates and performed OCR to extract the characters

Publications | (Google Scholar)

- **Encoding Web-based Data for Efficient Storage in Machine Learning Applications | ICInPro | IEEE**
- **Sentiment Analysis of Restaurant Reviews using Machine Learning Techniques | ICERECT | Springer**
- **Analysis of Customer Opinion using Machine Learning and NLP Techniques | ICCS | Elsevier**
- **Sales Forecasting of Retail Stores using Machine Learning Techniques | CSITSS | IEEE**
- **Vision-based Assessment of Instructional Content on Golf Performance | CVCI | Awaiting Acceptance**
- **Vision-based Detection of Helmetless Riders and Character Recognition of Number Plates (Manuscript under preparation)**