Rida Khan

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Academic History

Santa Clara University, Santa Clara, USA — ***Expected Graduation***, June 2021
M.S. Computer Science and Engineering — **CGPA** 3.82
Relevant Courses: Machine Learning, Deep Learning, Artificial Intelligence, Directed Research (Deep Learning for Image Compression), Big Data, Distributed Systems, Mobile App Development

Birla Institute of Technology and Science, Dubai, UAE — ***Graduated,*** June 2018
Bachelor of Engineering (Honors) In Computer Science — **CGPA** 8.16
Thesis on Predictive Analysis of Airlines Using Tweets

The International School of Choueifat, Dubai, UAE — ***Graduated***, May 2014
High School Diploma — **Final Grade** 82%

Work Experience

Freelance (Computer Vision) — ***Researcher***, June 2020 – January 2021

- Conducted research on computer vision techniques to differentiate between paint based on car images.
- Developed an algorithm which uses a combination of machine learning and computer vision to segment each panel individually (door, trunk, rear panel etc.) from car images.
- Developed a system which takes images of one car as input. For each car image, pairs of panels within the same image are extracted and the panels within the pair are compared to each other. The output showed whether the car had been repainted or not based on difference of paints.
- Optimized the system to reduce the execution time by 20%.
- This software was used to create daily reports using car images for a client.
- This project was done using OpenCV, Python and NumPy.

Santa Clara University — ***Graduate Research Assistant***, September 2019 – March 2020

- Conducted research including reading and presenting published papers weekly focused on Deep Learning Methods for Video Compression.
- Conducted weekly experiments concentrating on using deep learning for the task of video compression, specifically focusing on convolutional neural networks for interframe prediction of video sequences.
- The result was a novel predictive deep learning model for video compression which uses current and previous frame to compress and reconstruct the current frame. This work was published in SPIE conference proceedings.
- This project was done using OpenCV, Python, TensorFlow and Keras.

BITS Dubai — ***Undergraduate Research Assistant***, September 2019 – March 2020

- Conducted research, read and presented published papers as part of my final thesis on sentiment analysis of tweets to infer consumer loyalty.
- Conducted experiments to analyze various ways to use Twitter data to infer loyalty of consumers of chosen airlines.
- The result was a novel technique to use twitter data to predict a consumer loyalty score using which a consumer can be deemed loyal or disloyal to a selected airline. This work was published in IJACSA 2018.
- This work was done using Python, NumPy, Scikit-Learn and Tweepy.

RAS InfoTech Ltd, Dubai, United Arab Emirates — ***IT Intern***, June 2016 – August 2016

- Worked with different security solutions and learnt about the various features and back end software that is part of the security products and was part of lead generation campaigns.
- Did research and a final report on the backend of email.

Publications

Motion-aware Deep Video Coding Network April 2020

R. Khan, Y. Liu, Conference SI110: Big Data II: Learning, Analytics, and Applications, SPIE Defense + Commercial Sensing 2020, Anaheim, CA, Apr. 2020, accepted. Read Here.

Airline Sentiment Visualization, Consumer Loyalty Prediction using Twitter Data June 2018

Rida Khan and Siddhaling Urolagin, "Airline Sentiment Visualization, Consumer Loyalty Measurement and Prediction using Twitter Data" International Journal of Advanced Computer Science and Applications (IJACSA), 9(6), 2018. Read Here.

Projects

Video Colorization Using Deep Learning March 2021 – June 2021

Worked on a deep learning project to assess state of the art techniques to colorize images and videos. Three papers were chosen, modified and implemented and compared to a baseline model for colorization of grayscale videos.

Car Image Damage Detection using Machine Learning February 2020 – July 2020

Worked on a computer vision project to detect damage on a car in car images using OpenCV and Mask RCNN. Machine learning model was retrained with a new dataset of damaged and masked car images. The result were segmented images with masks indicating the damaged part on cars.

Video Compression using Neural Networks June 2019 – September 2019

Carried out image and video processing research for Professor Ying Liu at Santa Clara University over the summer. The research focused on deep learning coding techniques for video compression using fully connected networks and convolutional neural networks. Work was done using Python, NumPy and Keras.

Movie Mate: Android Mobile Application April 2019 – June 2019

Developed an Android mobile application called "Movie Mate" as part of a group project. This application lets users scroll through a wide movie selection and allows them to make personal lists with movie titles while also being able to like and dislike the movies as they please.

Brand Analysis of Airlines Using User Tweets August 2017 – December 2017

Data Science project and research paper, which included Sentiment Analysis of tweets for selected airlines and studying the variation in the sentiment scores and using these sentiment scores to predict consumer loyalty. Work was done using Python, NumPy, Scikit-Learn and Tweepy.

Skills

Software	Expert	Final Cut Pro; Apple iLife Suite (iMovie)
	Proficient	Keras; GIMP; Microsoft Office (Excel, Power Point and Word)
	Competent	TensorFlow; Hadoop MapReduce; Apache Spark; Hive; AutoCAD
Programming	Expert	Python (NumPy, Scikit-learn, OpenCV, Matplotlib, Pandas)
	Proficient	JAVA; C++
	Competent	PyTorch; PySpark; C; HTML5; Structured Query Language (SQL)
Languages	Expert	English
	Proficient	Hindi; Urdu
	Competent	French; Arabic

Seminars & Extracurricular Activities

Sci-Tech Student Research Seminar Series, Amity University ***Presenter,*** February 2018

Presented a project to students and faculty on the topic "Analysis of Airlines' User Tweets to Understand Consumer Sentiment." Came 1st Runner Up.