PRASHANTH REDDY DUGGIRALA

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EDUCATION

University of California, Davis *September 2019 - Present*
M.S. in Computer Science
Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram
B.Tech + M.Tech in Computer Engineering, CGPA: 8.82/10 *July 2014 - May 2019*

RESEARCH & WORK EXPERIENCE

Center for Innovation, L. V. Prasad Eye Institute May 2018 - May 2019
Machine Learning Intern/Research Fellow

- **Generative Adversarial Image Generation:** Research and development of models to generate a large dataset of images with high diversity (e.g., in subjects, head pose, camera settings) and realism, while still maintaining granular control over the above attributes using Deep Convolutional GANs.
- **Video based Gaze estimation of infants:** Development of Convolutional Neural Network based machine learning models for predicting eye-gaze direction and development of approaches for 3D head pose estimation based on facial landmarks to determine yaw, roll and pitch from two dimensional images.

Leoforce Inc., *Summer Intern* June 2017 - July 2017

- Worked with production database performance analysis and optimization team using MySQL server and Workbench.
- Monitored and profiled slow, unresponsive queries and stored procedures and improved their execution time so that the load on the server CPU is relieved and their application may become faster.

OSI Systems Inc., *Summer Intern* May 2016 - July 2016

Worked with AWK and Shell scripting languages with some understanding of VB Script for text processing.Developed efficient algorithms for testing the baggage flow control in airport security screening machine systems and achieved a significant improvement in performance from before.

Teaching Assistant, *Department of CS* Oct 2018 - May 2019

COM2017 Programming and Data Structures Lab (90 Undergraduate students)
COM212 Database Systems Lab (95 Undergraduate students)
COM510 Machine Learning (98 graduate and undergraduate students)

RELEVANT PROJECTS

- **Real time Camera Based Ophthalmic Diagnosis**
- Designed and prototyped an algorithm using OpenCV and Python to initially diagnose the symptoms of Duane Syndrome and later extended the functionality to estimate various anthropometric measures of the human eye by analyzing input from an RGB camera.

Correlating Crime and Education to predict incidence of crime in India

- Predicted the incidence of crime in the districts of Indian states based on the education parameters.
- Analyzed how the markers of education and literacy in a region affect crime using Data Analytics and Machine Learning.

Sentiment analysis of Twitter data

- Used the Twitter REST Application Programming Interface (streaming API) to access twitter data and estimated the public's perception (the sentiment) of the tweets.

Melanoma Recognition in Dermoscopy Images

- Devised Deep Convolutional Neural Network based algorithm to visually diagnose Melanoma, the deadliest form of skin cancer. The algorithm would distinguish this Malignant skin tumor from two types of benign lesions (Nevi and Seborrheic keratosis) by analyzing images of skin tissue.

Data analysis and prediction

- Analyzing and predicting bike sharing demand based on Capital Bikeshare's data using data analysis and Machine learning models using Python and libraries like Scikit, Numpy, Matplotlib and Seaborn.

HOPE-bot

- Designed, fabricated and wrote the firmware to a semi-autonomous, all-terrain robot which can used in earthquake rescue and hostage situations. It uses IR cameras, a TFT screen and other sensors to live stream real time data over to mobile and web app using on-board Raspberry Pi.