PRASHANTH REDDY DUGGIRALA

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EDUCATION

University of California, Davis *Expected Dec 2021*
Master of Science in Computer Science, GPA: 3.96 out of 4.00

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram
Bachelor and Master of Technology in Computer Engineering *May 2019*

RESEARCH & WORK EXPERIENCE

Graduate Student Researcher, UC Davis *Mar 2020 —*

· Developed deep stacked autoencoder based networks and progressive training techniques for unified representation learning from multiple modalities of data, specifically images and time-series data for applications like multi-modal transport and synthetic data generation in the health domain.

Graduate Researcher, RUbiNet Lab, UC Davis *Oct 2019 - Feb 2020*

· Visual Saliency Prediction and autism spectrum disorder (ASD) diagnosis in children: Developed models to recognize gaze patterns and differences between Autistic and typically developed individuals using computer vision and eye-tracking technologies.

· Co-authored and published our research in Signal Processing: Image Communication journal, vol 94.

Machine Learning Intern, Center for Innovation, L. V. Prasad Eye Institute *May 2018 - Oct 2018*

· **Eye Image Synthesis using Generative Adversarial Networks:** Researched and developed models to generate synthetic eye images for data augmentation using Deep Convolutional GANs and analysed the performance of the DCGAN using a custom metric based on categorical cross entropy loss produced on a pre-trained classifier to quantify the realness of the generated data.

· **Video based Gaze estimation of infants:** Development of Convolutional Neural Network based ML and 3D head pose estimation based on facial landmarks models for unconstrained non-intrusive gaze tracking of infants through a pediatric perimeter device.

Summer Intern - Part time, Leoforce Inc. *June 2017*

· Monitored and profiled slow, unresponsive queries and stored procedures using MySQL Server and Workbench to potentially improve query execution time.

TECHNICAL SKILLS

Python - Java - HTML - C++ - TensorFlow - PyTorch - OpenCV - Pandas

RELEVANT PROJECTS

Winning Atari Games using Deep Q Reinforcement Learning, *Machine Learning and Knowledge Discovery*

· Used Double DQN algorithm in PyTorch to play Atari Pong game with raw pixels of the game display as the input using OpenAI Gym. Achieved full dominance (Winning with no points lost) over the in-game AI after training for 1.7M frames.

Deep Spectral Clustering based Movie Recommender, *Recommender systems*

· Developed a movie recommender system based on Collaborative Filtering using Deep Spectral Clustering and Matrix Completion methods and achieved a cross validated mean squared error of 0.8 on the Netflix movie ratings dataset.

tsvd4j: Thread Safety Violation Detection for Java, *Operating Systems*

· Developed an active *delay-injection* tool to monitor multi-threaded Java applications by instrumenting target application bytecode and performing lightweight tracking and Inference to report thread-unsafe behaviors and concurrency bugs with 10% lower overall execution overhead than existing non delay-injection based dynamic analysis methods on a benchmark application.

Intracranial Haemorrhage Detection, *Deep Learning*

· Classifying multiple types intracranial hemorrhages with single slice CT scans through a single-stage, end-to-end, convolutional neural network framework based on Residual layers using Python and TensorFlow and achieved an average AUC score of more than 0.92 across 5 classes of hemorrhages.

Decentralised Resource Sharing Platform on Ethereum Blockchain, *Distributed Databases*

· Built a decentralized application for the Ethereum blockchain using Solidity and Truffle. It is a prototype of a peer-to-peer cloud storage system that allows users to share the idle storage of their hard drives to other potential users developed on web using node.js and HTML.