Sauhaarda Chowdhuri

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RESEARCH

PhonoViz: Chroma Feature Visualization for Hindustani Classical Music **March 2019 - Current**
First Author Paper in Review for FMA 2019 *San Diego, CA*

- Created a visualization technique for saliency information retrieval in convolutional networks handling audio data using LibROSA, PyTorch, and Google Compute Engine for processing.

PhonoNet: Multi-Stage DNNs for Raga Identification in Indian Classical Music **June 2018 - Current**
First Author Paper in ACM ICMR 2019 and Intel ISEF 2019 Finalist *San Diego, CA*

- Created a general-purpose machine learning architecture for processing long temporal sequences like those present in Indian Classical Music, achieving highest recorded accuracy in Hindustani Classical raga prediction.

MultiNet: Multi-Modal Multi-Task Learning for Autonomous Driving **April 2017 – June 2018**
First Author Paper in IEEE WACV 2019 *Waikoloa Village, HI*

- A novel modal insertion method is implemented to allow a single deep neural network to learn several distinct "behavioral modes" of operation simultaneously for autonomous driving.

WORK EXPERIENCE

UC Berkeley Deep Drive Laboratory **April 2017 – September 2017**
Undergraduate Researcher *Berkeley, CA*

- Created a novel Multi-Task and Multi-Modal learning algorithm which employs privileged insertion of modal data to an end-to-end autonomous driving system.
- Adapted a modular SqueezeNet network from the ImageNet classification task to perform a driving-like regression task with modal insertion, achieving state of the art driving performance.
- Transferred existing Caffe training repository to an PyTorch and H5PY Training Repository.
- Migrated Autonomous RC cars from NVIDIA TX1 to NVIDIA TX2 and Qualcomm Snapdragon Flight platforms using ROS framework for robotic control.
- Managed and implemented security protocols for a cluster of multi-user Linux servers.

Rockley Photonics **June 2016 – August 2016**
Software Engineer Intern *Pasadena, CA*

- Verified the CMOS of the Gen 1 optical network switches by creating C++ models of all switch components.
- Created efficient software for routing table generation using a modified Dijkstra's algorithm for distributed next hop calculation in a dynamic graph.

EDUCATION

Westview High School, San Diego, California **June, 2020**
STEM *San Diego, CA*

- California Scholarship Federation, AP Scholar with Distinction; 4.4286 GPA
- Robotics Team President, USACO Computing Olympiad Platinum Division, Competitive Programming Club Vice President, Cyber Security Club Vice President

Coursera **May, 2018**
Deep Learning Specialization *San Diego, CA*

- Certified in Neural Networks and Deep Learning, Improving Deep Neural Networks, Structuring Machine Learning Projects, and Convolutional Neural Networks.