

Sauhaarda Chowdhuri

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Skills

Languages: Python (MIT 6.0.0.1x Certification), C++, Java, LaTeX, Bash, Arduino

Libraries: PyTorch, Numpy, OpenCV, Matplotlib, Robot Operating System (ROS)

Tools: Git, Jupyter Notebook, TMUX, Vim, GNU/Linux

Work Experience

BERKELEY DEEP DRIVE LABORATORY, UNIVERSITY OF CALIFORNIA, BERKELEY

Undergraduate Researcher, Apr 2017 - Sep 2017

- Researched a novel approach to Multi-Task and Multi-Modal Learning through the use of privileged modal insertion allowing for distinctive individual behaviors to form as well as planning to be implemented in an end-to-end autonomous driving system.
- Adapted a modular SqueezeNet network from performing the ImageNet classification task to perform a driving-like regression task with modal insertion, achieving new standards of performance.
- Wrote the primary PyTorch and H5PY Training Repository in active use by the model car division at DeepDrive. This approach modularized the training repository's data handling and allowed simple and custom training through swappable JSON config files for different training setups.
- Migrated Autonomous RC cars from NVIDIA TX1 to NVIDIA TX2 and Qualcomm Snapdragon Flight platforms using a ROS framework in conjunction with Stereolabs ZED Depth Camera.
- Managed a cluster of multi-user servers for training neural networks by implementing protocols for the management and distribution of machine learning jobs across a network.

ROCKLEY PHOTONICS, PASADENA, CALIFORNIA

Software Engineer Intern, Jun 2016 - Aug 2016

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

Publications

MULTINET: MULTI-MODAL MULTI-TASK LEARNING FOR AUTONOMOUS DRIVING, IROS 2018

Primary Author, Paper under review

- A novel modal insertion method is implemented to allow a single deep neural network to learn several distinct "behavioral modes" of operation simultaneously.
- The novel method allows for improved performance on individual tasks in addition to lowering the number of parameters used for multiple task, which could lead to further advances in planning tasks.

Education

WESTVIEW HIGH SCHOOL, SAN DIEGO, CALIFORNIA

Academic GPA: 4.4286 Unweighted GPA: 4.0

Expected graduation, Jun 2020

- Relevant Coursework AP Physics 1-2, AP Physics C Mechanics + E&M, AP Calculus AB + BC
- Westview Robotics - Mechanism Design Lead, Computer Vision Lead, Kickoff Lead
- USACO Computing Olympiad - Platinum (Top) Division Internationally
- Competitive Programming Club - Vice President
- Varsity Cyber Security Member - Outstanding Academic Achievement California Senate Award