

Sauhaarda Chowdhuri

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EDUCATION

Massachusetts Institute of Technology

Bachelor in Electrical Engineering and Computer Science

June 2023
Cambridge, MA

RELEVANT WORK EXPERIENCE

MIT Driverless Racing

Perception Team - Machine Learning Researcher

October 2020 - Current
Cambridge, MA

MIT Computer Science & Artificial Intelligence Lab

Undergraduate Research Assistant for Adversarial Robustness

September 2020 - Current
Cambridge, MA

Lincoln Labs and MIT Environmental Sustainability Initiative (Joint)

Machine Learning Research Consultant for LIDAR Perception

September 2020 - Current
Cambridge, MA

Carnegie Mellon University

Machine Learning Research Lead

June 2020 - Current
Pittsburgh, PA

- Led a team to develop efficient AI tools for music analysis, speeding up my prior independent research by nearly 800%.

Peptide Logic Biopharmaceuticals

Machine Learning Research Consultant

January 2020 - Current
San Diego, CA

- Designed and implemented an ML pipeline for mouse behavior classification to be submitted for publication in 2020.
- Scaled models to production and made GUIs to allow pharmacologists to adjust models without AI domain knowledge.

Caltech Aerospace Robotics and Control Laboratory

Assistant Researcher

June 2019 - August 2019
Pasadena, CA

- Utilized existing deep reinforcement learning algorithms to solve classic control problems like leader-follower control.
- Presented weekly at lab meetings and to the project sponsor, Raytheon, to secure grant funding.

UC Berkeley DeepDrive Laboratory

Assistant Researcher

April 2017 - June 2018
Pasadena, CA

- Published a novel method for multi-modal autonomous driving with deep learning as first-author with 27+ citations.
- Managed PyTorch code repository, computer infrastructure, and deployment to the NVIDIA TX2 platform using ROS.

RELEVANT PROJECTS

Understanding Ragas in Hindustani Classical Music

- Designed a ML architecture for processing long-sequence temporal audio data, like that in Indian Classical music, to achieve a new state-of-the-art 98.9% accuracy for raga prediction in the Indian Art Music Raga Recognition benchmark.

COVID-19 Danger Meter

- Created a computer vision based ML web app which detects social distancing and plots compliance results geographically.

Research Blog

- Reviewed, explained, and simplified cutting edge techniques in machine learning and created new libraries for research use.

SELECTED PEER-REVIEWED PUBLICATIONS

S. Chowdhuri, T. Pankaj and K. Zipser, "MultiNet: Multi-Modal Multi-Task Learning for Autonomous Driving," 2019 IEEE Winter Conference on Applications of Computer Vision (WACV), Waikoloa Village, HI, USA, 2019, pp. 1496-1504.

S. Chowdhuri, "PhonoNet: Multi-Stage Deep Neural Networks for Raga Identification in Hindustani Classical Music." Proceedings of the ACM International Conference on Multimedia Retrieval. ACM ICMR 2019

ACADEMIC SERVICE

International Symposium on Frontiers of Research in Speech and Music (FRSM)

Peer Reviewer and Technical Program Committee Member

June 2024
Silchar, India

IEEE International Conference on Intelligent Robots and Systems (IROS)

Peer Reviewer

April 2018
Madrid, Spain

AWARDS

Kyoto Prize Symposium - \$10,000 Scholarship

May 2020

ACM International Conference on Multimedia Retrieval

Chair's Selection Best Paper Award

June 2019

International Science and Engineering Fair

Making Best Use of Data Award (\$1500) and 3rd Place in Robotics and Intelligent Machines (\$1000)

May 2019

SKILLS

Areas: Computer Vision, Robotics, Deep Learning, Multimodal Learning, Multi-Task Learning, Representation Learning

Languages/Frameworks: Python, PyTorch, Numpy/Pandas, Scikit-learn/XGBoost, OpenCV, Matplotlib/Plotly, ROS, C++

Tools: Google Compute Engine, iPython Notebooks, Git/Github, Linux/Bash, TensorBoard, CUDA, AWS

Techniques: CNNs, RNNs, Classical ML Algorithms