

Graduate Student
MS in Computer Science 2019-21
Stony Brook University, NY

HARSHIT

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Areas Of Interests

Computer Vision, Q-Learning, Machine Learning, Statistics, Data Science, Time Series Data Analysis, Distributed Systems

Education

M. S. Computer and Information Science, Stony Brook University, New York	[2019-21]
B. Tech. Computer Science and Engineering, Indian Institute of Technology, Patna, India, CPI: 8.84/10	[2013-17]

Work Experience

Engineer I	Samsung Research SRI-Delhi	2017-2019
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I worked at Product Intelligence team, responsible for developing software tools for analyzing product performances, memory profiling, operating time performance tasks. I worked on Big Data, produced analytics influencing proactive product decisions and monitoring timelines of different product models via Predictive models. I played a key role in the setup of Memory and Performance task force for profiling Tizen OS.

Research Internship	Nanyang Technological University, Singapore	Summer 2016
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Worked at HESL Lab under Prof Vinod Prasad and team deployed to proposed and verify bio metric authentication using EEG bio metrics. Collected and mined EEG responses of subject on audio and visual stimuli. Implemented the authentication system and analyzed the results of the experiment.

Supervisor :- Prof Vinod A. Prasad

Research Internship	Indian Institute of Technology, Kharagpur	Summer 2015
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I worked at the CNeRG lab, under Dr Niloy Ganguly and with Dr Abir De, to work on EPS graphs generated via MATLAB. to format these EPS graphs (each graph consists of 1500 – 2000 lines) using file I/O. Python, Bash

Supervisor :- Prof Niloy Ganguly

Personal Projects

Copter QL: The Q-Learning Helicopter Game (2019)	Deep-learning, Pygame
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Aimed to make agent learn to play copter using deep reinforcement learning techniques. Implemented a Deep QNetwork (DQN) for learning Q-values for approximate state-action pairs. Exploiting the visited state-action pairs with proper exploration new state-action pairs. Exploring safety conditions to ensure reasonable system performances.

Adaptive Object Tracking (2016-17)	Python, Opencv
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Aims at tracking person through the frames of video. Used descriptor based object information [HOG] and condensation algorithm to track people through the frames of video. Used PET 2009 dataset for evaluation, with accuracy of 93%. This project was done as the final year project. This projects also helps to track a person through various cameras in some surveillance system.

Centrality Metrics in Dynamic Networks (2017)	Python
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A new hybrid centrality metric is proposed, consisting of PageRank, average importance over time with aging factor also. Citations network is used as the dataset. Metrics obtained corresponding to important publications were comparably higher.

Lecture Assistant (2016)	Python, RPi, Arduino, BASH
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An IoT based device was developed which was able to track the lecturer, and record a video of stuffs being taught in class. It had a camera set over a servo motor which was controlled via a Raspberry Pi or and Arduino. The camera rotates towards the moving lecturer and streams its frames over the server. The server has a webpage wherever students can discuss doubts and take quizzes related to the topic.

Road Traffic Congestion Sensing (2014)	PHP, MySQL
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This project eases the measurement of road traffic with cheap and implementable manner. It uses front-end sensor for getting data, which is triggered to the server at some defined locations on the roads and a server-end to manipulate the large sets of data received from vehicles, proposed to use Map-Reduce for processing and produce required road traffic measurements[such as average speeds, peak hours, etc.].

Conference Publications

- Online Electroencephalogram (EEG) based biometric authentication using visual and audio stimuli, IECBES 2016
- Road Congestion Sensing via Crowdsourcing and MapReduce, IPSN 2015

Other Experiences And Achievements

Graduate Teaching Assistant, Data Structures (CSE214) Fall '19, CS - Stonybrook University, New York
Bronze medal in IoT Innovation at Inter-IIT tech meet (2016). Second in IEEE ISD Grand Challenge December 2016.
General Secretary Cultural Affairs, Student Gymkhana, & B. Tech. Senior Year General Secretary, IITP (2016-17)

Competition Expert @ Kaggle [Currently ranked - 3468]

Languages And Others

Java; Python(keras, pandas, opencv, scikit, etc); C; GOLANG; MySQL; Latex; HTML; CSS; JS; Django; Linux