SIDHARTH TALIA

EDUCATION

Guru Gobind Singh Indraprastha University Delhi 2016 - 2020
— *Bharati Vidyapeeth College of Engineering Delhi* *Delhi, IND*
Bachelor of Technology in Electrical and Electronics Engineering Cumulative GPA: 8.81/10.0

Sardar Patel Vidyalaya, Delhi, India 2014 - 2016
— *CBSE* *Delhi, IND*
Class 12th, Computer Science Percentage: 93.4%

EXPERIENCE

University of Washington, Seattle April 2020 - Present
MuSHR remote researcher, Dr.Siddhartha Srinivasa *Seattle(Remote), WA, US*
- MuSHR multi-agent navigation team lead, focusing on object manipulation/pushing
- Developed local-controller framework and an auto-test framework to collect statistical data(ROS)
- Created a deep-learning trajectory generation system and improved driving smoothness over direct steering prediction method by 50 % (Pytorch)
- Integrated the MuSHR car into the donkey simulator: MuSHR-DL framework(Unity)

Freelance software Engineer/consultant January 2021 - December 2021
self-employed *Delhi, IND*
- Providing consultancy/software engineering services to start-ups in the automation sector

Indian Institute of Technology(I.I.T.)-Delhi June 2019 - July 2020
DLive project intern, Advisor: Dr.Sunil Jha *Delhi, IND*
- Improved positioning system accuracy from 11 meters to 2 meters by fusing GPS data with IMU and wheel odometry data(ROS, ardupilot)
- Developed Classical CV based lane-detection and keeping system. Tested in simulation(CARLA, OpenCV, ROS).

Botlab Dynamics February 2019 - April 2019
RnD intern *Delhi, IND*
- Developed an optical flow based visual odometry system for UAVs with 3% drift(OpenCV, Ardupilot)

Indian Institute of Technology(I.I.T.)-Delhi June 2018 - August 2018
Celestini program India 2018 project intern, Advisor: Dr.Aakanksha Chowdhery *Delhi, IND*
- Created an Advanced Driver Assistance System (ADAS) coupled with V2V communication
- Created an optical flow based collision prediction system. Tested in simulation and with real world data(OpenCV)

Omnipresent RobotTech June 2016 - October 2017
Intern *Delhi, IND*
- Multi-rotor hardware design, and flight controller for attitude control(Embedded C++, Autodesk Fusion360)
- Micro ground vehicle with waypoint following using GPS-IMU fusion system for feedback(Embedded C++)

PUBLICATIONS

Sidharth Talia February 2020
"A multimodal approach for localization of Ackermann steering micro ground vehicles in bad GPS reception environments" (Published)

Komal Bagai, **S. Talia**, S. Banerjee, N.K. Agarwal, H. Sharma May 2020
"Operation of isolated DFIG with Modified PnO MPPT Algorithm" (Published)

Abhijeet Bhattacharya, S. Banerjee, S. Girotra, H. Shukla, G. Bhardwaj, **S. Talia** June 2020
"Simulation and Design of PI-Controller for the Control of Buck Converter" (Published)

PROJECTS

Projects done with/for MuSHR at UW: 2020 - 2021

- Multi-agent navigation system (ROS, C++, Python)
- Integration of the MuSHR car into the Donkey Simulator for reinforcement learning (Unity)
- Leveraging Bezier curves for deep learning based autonomous navigation (Pytorch)

State estimation and control projects (independent): 2017-2021

- Unified state control for planes using quasi optimal trajectories (Python, Realflight 9.5) .
- High accuracy inertial navigation system on a budget (Embedded C++, ROS) .
- Low cost mini-self-driving car with robust state estimation and control. Blog 1 Blog 2 (Embedded C++)
- Quad-copter flight controller for orientation and altitude control (Embedded C++) .

Projects done with/for GGSIPU: 2017- 2020

- Sinusoidal PWM generation from low cost microcontroller (Embedded C++)
- Solid state control simulation and design for AC Machines (Embedded C++, MATLAB)

Deep learning based song remix generator 2019

- Used Google's Deep-dreamer to remix songs (Python, Tensorflow)

AWARDS AND RECOGNITIONS

2nd position	ML-Hacksprint, BVCoE Delhi - Deep learning for music remixing	2019
3rd position	Celestini Program India 2018 - ADAS coupled with V2V	2018
2nd position	BITS-Hyderabad ATMOS GP - Model I.C. Engine car race	2017
1st position	IIT-Kanpur Techkriti GP -Model I.C. Engine car race	2017
3rd position	HBNIC (innovation challenge) 2017 - Micro autonomous ground vehicle	2017

SOCIETY MEMBERSHIPS

IEEE Student Branch 2018 - 2020
Head of MAKERS student interest group *Delhi, IND*

- Conducted workshops for IEEE undergrad students on robotics, CAD.
- Conducted a quad-copter building-and-tuning workshop for undergrad students.

IET Student branch 2016-2020
Student member *Delhi, IND*

- Conducted workshops on embedded systems for first year engineering undergraduate students.

TEST SCORES

- GRE general test score: 326, Quant:170, Verbal: 156, AWA: 4.0 Ref. No. : 5976511
- TOEFL-iBT score: 115, Reading:29, Listening:27, Speaking:29, Writing:30, Ref. No.: 2747 8092 1483 4883