

Abhinav Modi

abhi1625@umd.edu | 240-513-0726 | LinkedIn: [abhinavmodi16](#) | Github: [abhi1625](#)
6008 Osage Street, Berwyn Heights, MD

EDUCATION

University of Maryland, College Park
Masters of Engineering in Robotics

College Park, MD
Aug. 2018 - May 2020

- **GPA:** 4.0/4.0

Birla Institute of Technology and Science(BITS), Pilani
Bachelors of Engineering(Hons.) in Mechanical Engineering

Rajasthan, India
Aug. 2014 - May 2018

- **GPA:** 7.53/10(3.18/4)

Relevant Coursework: Control of Robotic Systems, Robot Modelling, Planetary Surface Robotics, Mechatronics, Intro to MEMS, Neural Networks and Fuzzy Logic, Pattern Recognition, Reverse Engineering and Rapid Prototyping

TECHNICAL SKILLS

Modeling and Analysis
Software & Tools

Solidworks, MSc ADAMS, Simulink
MATLAB, Python, Tensorflow, OpenCV, C++, ROS, Adobe Photoshop, LaTeX

TECHNICAL EXPERIENCE

Perception and Robotics Group, University of Maryland
Graduate Research Assistant

Aug. 2018 - Present

- Working towards implementation of Geometric and Model Predictive based control systems for online trajectory tracking and altitude control of quadrotors.

Autonomous Micro Aerial Vehicle(AMAV) Team
Graduate Research Assistant

Dec. 2019 - Present

- Work with a team of 20 members to develop a micro aerial vehicle to participate in the 7th annual VFS MAV Student Challenge, 2019 to be held in Philadelphia, PA.
- Developing vision based algorithms to generate dynamically feasible trajectories for quadrotor control.

PROJECTS

- **Edge Detection using Pb-Lite:** Edge detection in images using "Probability of Boundary" method by computing k-means on texture, brightness and color gradient maps.
- **Unsupervised Deep Homography:** Trained an Unsupervised Neural Network on COCO dataset to generate a panorama .
- **Cable Suspended Load form a Quad:** Implemented Geometric Control based on differential flatness to track trajectory of a load suspended from a quadrotor
- **BIOBOT:** Developed a conceptual model of a one-crew carrying Lunar Rover. The rover follows the astronaut with an onboard Life Support System to aid in physical movement of the astronaut.

LEADERSHIP EXPERIENCE

Inspired Karters, Formula Student Team, BITS Pilani
Team Captain

Feb. 2016 - Feb. 2017

- Established a new team structure for a team of 50 students from multiple disciplines to incorporate a KTM 390 engine, smaller wheels (10" & 12"), and a full body aero-package, all for the first time in the history of the team.
- Successfully raised INR 150,000 as a team in only one month's time, amounting to INR 7,50,000 during the whole year.

Team Member

- Performed an active role in decision making and squad selection for various inter-university tournaments.
- In-charge of managing inventory for the team and tournament scheduling for **Bits Open Sports Meet, 2017**.

49th **Engineers' Day Celebrations and Poster Presentation**

Sept, 2016

Team Member - Organizing Committee

- Worked towards organizing quizzes, panel discussion and poster presentation competition for the event.
- Co-presented a poster on "What we learn at Inspired Karters" for the theme: Skill Development for Young Engineers to Reform the Core Sector: Vision 2025.

ACTIVITIES AND AFFILIATIONS

Society of Automotive Engineers

May 2016 - July 2017

Department of Art Design and Publicity

Aug. 2014 - May 2018

BITS Pilani Cricket Team

Aug. 2014 - May 2018

EXTRA-CURRICULAR

State level athlete and District record holder, U-16 category, 100m hurdles, represented the district of Fatehgarh Sahib in the 2011 intra-state games held in Ludhiana, Punjab, November 2011

Part of the Field Hockey team of my hostel for Intra Bits Open Sports Meet (I-BOSM); winners in 2018, runner-ups in 2017.

Gold Medalist in Discus Throw, I-BOSM, 2018.

Silver Medallist in Javelin Throw, I-BOSM, 2017.