Abhinav Modi

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EDUCATION

University of Maryland, College Park — **College Park, MD**
Masters of Engineering in Robotics — *Aug. 2018 - May 2020*

- **GPA**: 4.0/4.0

Birla Institute of Technology and Science(BITS), Pilani — **Rajasthan, India**
Bachelors of Engineering(Hons.) in Mechanical Engineering — *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	Solidworks, MSc ADAMS, Simulink
Software & Tools	MATLAB, Python, Tensorflow, OpenCV, C++, ROS, Adobe Photoshop, LaTex

TECHNICAL EXPERIENCE

Perception and Robotics Group, University of Maryland — *Aug. 2018 - Present*
Graduate Research Assistant

- 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 — *Dec. 2019 - Present*
Graduate Research Assistant

- 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 — *Feb. 2016 - Feb. 2017*
Team Captain

- Established a new team structure for a team of 50 students from multiple disciplines to incorporate a KTM 390 engine, smaller wheels (10âĂİ), 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**.

49^{th} **EngineersâĂŹ 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 âĂIJWhat we learn at Inspired KartersâĂİ 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-CIRRUCULAR

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.