Vanshil Shah

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EDUCATION

- **University of Pennsylvania** — Philadelphia, USA
  MS in Mechanical Engineering with Robotics Specialisation — *Aug. 2021 - May 2023*
  Relevant courses: Machine Learning, Introduction to Robotics, Design of Mechatronic system

- **Institute of Technology, Nirma University** — Gujarat, India
  Bachelor of Technology in Mechanical Engineering — *Aug. 2015 - May 2019*

PUBLICATIONS

- Prashant Kumar*, Sabyasachi Sahoo*, **Vanshil Shah**, Vineetha Kondameedi, Abhinav Jain, Akshaj Verma, Chiranjib Bhattacharyya, Vinay V. **"DSLR : Dynamic to Static LiDAR scan Reconstruction using adversarially trained autoencoder"** (*AAAI Conference on Artificial Intelligence 2021, Full paper*)

- Unni Krishnan R Nair*, Anish Gupta*, D. A. Sasi Kiran, Ajay Shrihari, **Vanshil Shah**, K. Madhava Krishna **"Non Holonomic Collision Avoidance under Non-Parametric Uncertainty: A Hilbert Space Approach"** (*European Control Conference(ECC) 2021, Full Paper*)

WORK EXPERIENCE

- **ZF Friedrichshafen** — Feb 2021 - June 2021
  SDE, Machine Learning and Data Team — *Varun Jain*
  - Made a framework for automating the Global Talent tracker using Microsoft Sharepoint API
  - Deployed the whole framework on Azure as a Function App for periodic updation

- **International Institute of Information Technology, Hyderabad** — April 2020 - Nov 2020
  Research Assistant, Robotics Research Center | Collaboration: Rockwell Automation — *Prof. K Madhava Krishna*
  - Simulated the non-parametric uncertainty based collision avoidance framework in Gazebo
  - Formulated chance constraints for obstacles enabling smooth navigation in dynamic scenarios.

- **Indian Institute of Science(IISc), Bangalore** — Sept 2019 - March 2020
  Research Intern, Machine Learning Lab | Collaboration: Ati Motors — *Sabyasachi Sahoo*
  - Developed a generative model for dynamic to static LiDAR scene translation for improving navigation in a dynamic setting.
  - Devised a novel dataset generation pipeline to create a first of its kind LiDAR based static-dynamic frame dataset.
  - Achieved *4 times better reconstruction* on Chamfer Distance over state of the art baselines.

- **Robert Bosch Center for Cyber Physical Studies(RBCCPS)**, Bangalore — July 2019 - Feb 2020
  Perception Team, MBZIRC 2020 | Collaboration: TCS Innovation Labs — *Dr. Raghu Krishanpuram*
  - Deployed inertial-based visual navigation algorithms for facilitating quad copter autonomy in degraded environments *[Video]*

- **Defence Research and Development Organisation(DRDO), Bangalore** — Jan 2019 - May 2019
  Research Intern, Center for Artificial Intelligence and Robotics — *Dr. Shubhashisha Sahoo*
  - Deployed the navigation stack on autonomous tracked robots used by Indian Defence Forces.

ACHIEVEMENTS

- ***Search and Rescue Snake Robot***
  - The project was in the top 7 teams for the E-Yantra Robotics Competition. *[Video](Hardware)* *[Video](Simulation)*

SKILLS

- **Deep Learning Framework**: PyTorch
- **Languages**: C++, Python
- **Simulator**: Carla, Gazebo, V-REP
- **ROS**