Vedant Anand

+31 6 57462052 | vedantanand@tudelft.nl | Delft, Netherlands | LinkedIn

EDUCATION

TU Delft, Delft, Netherlands — Sep 2025-ongoing

Masters of Science in Robotics

Relevant Courses: Model Predictive Control, Machine Learning, Machine Perception, Advanced Machine Perception.

SRM University, Chennai, India — Sep 2020-Jun 2024

Bachelors in Mechatronics Engineering with specialization in Robotics

CGPA: 8.75

- ***Patent (Application no. 202441029892):*** Design of Autonomous Underwater Vehicle (Published) Feb 2025
- ***Relevant coursework:*** Machine Design, Kinematics and Design of Rigid Mechanisms, Electrical Machines and Actuators, Robotics, Fluid Power Systems and Automation, Sensors and Signal Conditioning, System Dynamics, Manufacturing Processes, Design of Mechatronics Systems

EXPERIENCE

Graduate Engineer Trainee — Nov 2024 – Jul 2025

Yamaha Motor Research and Development India Private Limited

Responsible for: EL Design

- Designed improvements in meter model of Yamaha new vehicle project for Indian Market. (Yamaha XSR 155, released in Indian Market in 11 November 2025)

SRM University, Chennai, India — Mar 2023 – Jun 2024

Mechanical Fabrication and Design Lead, SRM Autonomous Underwater Vehicle (SRMAUV) Team

Responsible for: Mechanical Design and Fabrication of Underwater Vehicle

- Engineered compartments for electronic units, reducing space consumption through establishment of stack design layers
- Implemented cylindrical chassis hull designs with extruded channel frame for shock absorption
- Designed and Fabricated the hull cap for waterproof seal, implementing Double O-Ring facial seal.

Zamil Steel, Pune, India — Dec 2022

Production and Quality Trainee

Zamil Steel devised a training/ internship program for engineering students to gain an Industrial Exposure.

- Gained exposure to various types of machines in the assembly line such as, shearing machines, milling machines, welding machines, painting machine and oven for steel metals blocks.
- Site visit at Pirangut(construction of Godrej's office), where Pre-Engineered Blocks (PEBs) were transported and assembled.
- Devised a design recommendation of a computer vision system for Quality Check to be included in the assembly line, to eliminate the potential human based errors during quality control.

SRM University, Chennai, India — Sep 2020 - Apr 2022

Mechanical Fabrication and Design Member, Rudra-SRM Mars Rover

Responsible for: Drive System, Robotic Arm

- Improved Degree of Freedom of arm for fixed payload by replacing linear actuators and implementing rotational actuators.
- Modeled Robust End-effector's yaw-pitch-roll design with Bevel Gears for better stress tolerance and precision in movement.
- Designed hybrid drive system for lower power consumption using 4-wheel drive mode and improved flexibility using tripod gait.

VOLUNTEERING

Alumni Networking Event Volunteer (MOCO Project) — Dec 2025

- Assisted in organizing a faculty alumni networking event, support event logistics and lab tours, and facilitated networking discussions with senior industry professionals and researchers.

TEDxSRMIST, Organizing Committee (Curations and Operations) — Aug 2022 – Jun 2024

- Defined speaker selection and speech structuring based on TEDx guidelines to enhance the audience experience. Chose speakers from over 100 applications, prioritizing creativity and eloquence to ensure high-quality and diverse content for the event.

PROJECTS

TU Delft, Delft, Netherlands

MPC-Based Adaptive Cruise Control with Disturbance Estimation Feb 2026 - Mar 2026

- Designing and implementing an MPC-based adaptive cruise control system with state and input constraints, including terminal set design and stability guarantees. Conducting simulations with disturbance observers and benchmarking performance against LQR to analyze constraint handling, tracking, and robustness.

Path Tracking of RRT-Generated Trajectories Using PID and MPC Dec 2025 – Jan 2026

- Developed a motion planning and control pipeline for a car-like robot by generating collision-free paths using RRT* and implementing PID and Model Predictive Control (MPC) for trajectory tracking. Evaluated both controllers in simulation, demonstrating trade-offs between tracking accuracy, smoothness, and constraint handling, with MPC achieving more realistic and dynamically consistent motion.

SRM University, Chennai, India

Vehicle Advancement Technology for Knowledge in Hydrodynamics and Development (VATKHD) Aug 2023 – Jun 2024

- Designed a comprehensive AUV design and assessed its performance in varying underwater conditions. Utilized CAD modeling to design a vehicle weighing less than 25 Kgs which had a battery capable of supporting operation for approximately one hour.

Implementation of Denavit-Hartenberg (DH) Parameters on RR Manipulator using IOT via NodeMCU ESP32 Nov 2022

- Implemented and verified DH parameters on robotic arm of RR configuration via servo feedback response mechanism with attached mechanical end effector using ESP32 NodeMCU micro-controller code for IoT control using Blynk.

Compact Extraterrestrial Navigation Technology for Autonomous Underground Reconnaissance Jun 2021- Sep 2021

- Designed and analyzed a rover system in SolidWorks featuring an interchangeable drive for smooth wheel transitioning across Martian surfaces, ensuring flexibility and efficient data transmission. The system includes an auger mechanism for sample collection, enabling in-situ biological and elemental analysis with an OrganiCam and Electron Beam generator to assess microbial life and habitability. Additionally, a gripper mechanism was developed for retrieving Martian regolith for geological and ex-situ analysis.

Implementing Vehicle Design of Snow Clearing Automobile for High Altitude Areas Spring 2021

- Developed a proof of concept for a snow-clearing vehicle to address the DRDO problem statement for high-altitude snow removal. The design includes a 3D model of a vehicle with a scooper and impeller-based mechanism for snow accumulation, along with an attachable sprinkling system for uniform distribution of eco-friendly chemicals to slow snow formation and improve clearing efficiency in high-altitude areas.

Human Assisting Mobile Robot with Integrated Produce Chopping Mechanism Feb 2021- Mar 2021

- Formulated Rover Design with “Chopping mechanism” based on learnings from the motion analysis of linear actuator control and servo feedback, this was helpful in blade selection, resulting in reduced human involvement.

Geyser Hot Spring Traversal Rover Dec 2020 - Jan 2021

- Engineered a rover capable of withstanding temperatures up to 302°F using epoxy-based insulation for protection in hot geyser spring terrains. Designed an auger mechanism to collect below-surface samples, along with a transfer system to store the samples inside the rover chassis.

ACHIEVEMENTS

- Special Award for “Tenacity”, TAC Challenge 2024 (International Subsea Drones Competition) Jun 2024
- “Best Multidisciplinary Project of University” – Runners Up, SRM University May 2024
- National Level Hackathon, NEXUS – Second Runners Up, Coimbatore Institute of Technology Mar 2024
- Introduction to Internet of Things (IoT) - Top 5%, Silver category, NPTEL, IIT Kharagpur Oct 2022
- Defense Service Hackathon (Hardware) - 2nd (Silver) Mar 2021
- International Rover Design Challenge - Innovation Award for Drive System, Space Robotics Society Jun 2021- Sep 2021

LANGUAGES & INTERESTS

Languages: English (CEFR C1, IELTS 7.0), Marathi (Native), Hindi (Native), French (Elementary Proficiency A2)
Interests: Chess (chess.com rating: 2100+)