Achal Vyas

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EDUCATION

University of Maryland College Park, MD
Master of Engineering in Robotics, (GPA: 3.5/4) May 2021

- Coursework: Software Development, Modeling, Control, Reinforcement learning, Perception and Planning for Robots.

Indus University Ahmedabad, India
Bachelor of Mechanical Engineering, (GPA: 9.72/10) June 2019

- Coursework: Systems Engineering, Automobile Engineering, Industrial, Machine Design, Fluid Mechanics, Machinery.

TECHNICAL SKILLS

Programming Languages/Lib.:	Python, C#, C++, ROS, OpenCV, MATLAB, Java, .Net, TenserFlow, Numpy, PyTorch
Modelling/Designing Tools:	AutoCAD, Creo, ANSYS, Solid Works, Fusion 360
Platform:	Gazebo, Simulink, Linux, Git, V-Rep, WeBots, Analogic, PyBullet
Hardware:	Arduino, PLC circuits, Raspberry Pi, Odroid, Pixhawk

WORK EXPERIENCE

Autonomous Micro Aerial Vehicles: (Link) College Park, Maryland
Research Assistant - Lead control and autonomy Aug. 2019- Present

- Developed algorithms for computer vision and autonomous systems used in the drone.
- Fabricated an autonomous drone which can pick a package, avoid obstacles, and deliver the package.
- Constructed an autonomous self-designed and developed drone to perform various tasks like picking the objects, avoiding an obstacle, and navigating through space.

Staubli Corporation: (Link) Duncan, South Carolina
Robotics Development Intern June 2020- Aug.2020

- Developed code for controlling the robots to perform complex tasks using Staubli Robotics Suite.
- Executed various tasks by the robots using ROS.
- Assembled and tested various sensors and components involved in the robotics system.

VOX360 Ways Pvt Ltd. (Link) Ahmedabad, India
Software Development Intern June.2016 – Aug.2019

- Developed, maintain, and tested computer software by incorporating languages like Python, C++ and .Net framework.
- Executed the software development lifecycle (SDLC) to design, plan, build, test, and deploy software applications.

Ingeco Gears Pvt. Ltd. (Link) Ahmedabad, India
Design Engineer Intern June 2015 – Aug. 2015

- Designed gearbox, speed reducers and lifting mechanisms using AutoCAD and SOLIDWORKS.
- Supported the New Product Innovation (NPI) team by providing insights on efficient design and improving machining techniques. Simulated sample designs on MasterCam.

RELEVANT PROJECTS

Human Detection Module:

- Developed a human obstacle detector system, which tracked the human obstacle and avoided it.
- Obtained and analyzed training/test data by use of image processing.
- Programmed a computer vision module using C++ and OpenCV dependencies, used Object-oriented programming, version control with git, testing, and agile software development process.

Spot welding Robot (4 axis):

- Developed the design in Solid Works, the analytical calculation in MATLAB, fabrication, programming of the welding robot. Got selected in smart India Hackathon 2019 (national level competition) innovation challenge.
- Succeed in creating a welding robot which is cost-effective and optimum for the batch production industry.
- Implemented a PID controller module for a new Mobil robot product development.

TENEZEBO:

- Used C++, ROS and OpenCV to simulate a tennis ball collecting robot. Applied Agile Iterative Process to design and implement a tennis ball detection and collection pipeline.

Path Planner | Python, ROS, Numpy, Matplotlib

- Implemented Dijkstra and A* Algorithms on a point and a rigid robot and scaled it for use on a 3d robot in Gazebo simulation.