

# Aadhya Puttur

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## EDUCATION

**Worcester Polytechnic Institute (WPI)**, Worcester, MA  
*Bachelor of Science - Computer Science*

May 2023

## SKILLS

Programming Languages: Python, Java, numpy, ROS, C++, C, JavaFX, Javascript, MySQL

Tools: OpenCV, Pytorch, Github, Figma, Agile Methodology, Linux

Databases: MySQL, Apache Derby      Electrical: Soldering and Wiring, Raspberry Pi, Arduinos

## PROFESSIONAL EXPERIENCE

**Research Technical Intern**, MIT Lincoln Laboratory, Lexington, MA

June 2022- August 2022

- Extracted LiDAR data by implementing an algorithm to analyze missing data in a canopy forest to find loss of data missing in different areas and views of the canopy forest

**Research Technical Intern**, MIT Lincoln Laboratory, Lexington, MA

May 2021- August 2021

- Assembled a coffee can radar and implemented a method to properly transfer it to work with the Arduino MKRZero using serial communications and MATLAB.
- Researched on serial communication, USB communication, data transfer, and programmed in MATLAB.

**Research Technical Intern**, Raytheon BBN Technologies, Cambridge, MA

May 2020 - August 2020

- Implemented communication of the hierarchical task network (HTN) for swarms of drones to be able to run a simulation with a live database using MySQL

**Software Engineering Intern**, Raytheon BBN Technologies, Cambridge, MA

June 2019 - August 2019

- Implemented a communication flow between a drone called the Skydio with a drone using a different interface through TCP connections and multithreading

## PROJECTS

**12 Degree of Freedom Quadruped Robot**, Major Qualify Project, WPI

Aug 2022 - Present

- Building a 12 degree freedom Quadruped Robot that can detect obstacles and follow a moving target
- Implementing object tracking and environment representation using computer vision state of the art methods
- Implementing a control system along with a ROS communication architecture to communicate between low level controls and computer vision
- Created a website for grant proposal for this project

**SfM (Structure from Motion) and NeRF (Neural Radiance Fields)**, Computer Vision

Present

- Using classical SfM technique, epipolar geometry, linear and nonlinear triangulation, and bundle adjustment
- Implementing NeRF using a fully connected (non-convolution) deep neural network

**FaceSwap**, Computer Vision

Aug 2022

- Implemented face warp of two faces by using Triangulation and Thin Plate Spline

**Edge Detection and Image Filtering**, Computer Vision

Aug 2022

- Implemented PB boundary detection algorithm by creating a texton, color, and brightness map to consider texture, color information, and intensity

**Panorama Stitching**, Computer Vision

Aug 2022

- Implemented feature matching and RANSAC algorithm and calculated homography between two images

**Camera Calibration**, Computer Vision

- Calibrated camera by mapping 3D world coordinates to image coordinates and then estimated parameters of camera through the processes of calculating intrinsic and extrinsic parameters

**Personal Website**, [aadhyaputtur.com](http://aadhyaputtur.com) ~ First attempt on making a website

June 2022

**Mass General Brigham Hospital**, Software Lead, WPI

March 2022 -April 2022

- Led the development of 20,000 line, full-stack Java application prototype as part of a 10 person, Agile Scrum team

**SPECTRUM**, COVID Innovation Challenge, WPI, *2nd Place*

June 26, 2020

- Link to competition submission pitch video: <https://www.youtube.com/watch?v=yBG85EsSapw>
- Prototyped a COVID PPE in three days for the challenge that uses UV light to kill germs as part of the mask.