

Neeraj Chandratre

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EDUCATION QUALIFICATIONS

Arizona State University, MS in Robotics and Autonomous Systems

August 2021 – May 2023

GPA: 4 out of 4

Tempe, USA

Savitribai Phule Pune University, Bachelor of Engineering in Mechanical Engineering

August 2014 - October 2019

Pune, India

SKILLS

ROS1, Arduino, Cura, CAD, VTK, ROS2, Jupyter notebook, GD&T, CMake, Eigen, FreeCAD, PLC, HMI, Flask, React, FastAPI, Docker

software languages: C, C++, Python, Bash, HTML, 8085 Microprocessor Machine language, CSS, Javascript, SQL

WORK EXPERIENCE

1) Bharati Robotic Services

16th April 2025 – 11th September 2025

Profile: Robotics Engineer

- Added new features for LIDAR, teensy and motors in existing C++ code and tested them. Used ROS and C++.
- Completed setup of linux OS on rpi for running rpi cam on it and for making image file of it.
- Completed setup of docker container for running the code and did soldering.

2) Sakar Robotics Private Limited

16th July 2024 - 8th February 2025

Profile: Robotics Engineer

- Spearheaded in creating an autonomous ground robot integrated with robot arm using C++, python, solidworks, soldering, basic electronics, mechanical assembly etc. Accomplished teleoperation, obtaining wheel odometry, april tag detection and its tf w.r.t robot arm base, Navigation2 and LIDAR working and inverse kinematics calculations of robot arm, 4DOF robot arm using solidworks and 3D printing, AMR assembly using a kit and shifting all software from PC to Jetson Orin Nano.
- Completed RTAB-MAP and Nvblox based mapping using multiple RGBD cameras for AMR using C++.
- Did C++ and python based troubleshooting and development in areas of Navigation2, simulation and operation of AMR. Made Solidworks CAD model of AMR with its lift. Also did assembly, disassembly, maintenance and fitting of new hardware on AMR.

3) EPICS (Engineering Projects In Community Service) at Arizona State University

7th August 2023 – 23 June 2024

Profile: Mechatronics Intern

- Spearheaded entire drone light show project which includes forming problem statements and selecting and implementing Kalman Filter, path planning and waypoint assignment algorithms on drones using C++ and python. Studied, corrected and made CAD drawings using Solidworks.

4) Active Perception Group

2nd January 2023 – 28th April 2023

Profile: Volunteering

- Spearheaded in collecting data using Optitrack and building a humanoid robot using Visualization Toolkit (VTK) and majorly using C++. The data consists of orientations of human body parts and pelvis movement.
- The collected data is successfully used by robot to mimic my body movements. Also, managed to translate the Pelvis.

5) Vira Enterprises

1st August 2020 – 31st August 2020

- Performed production work on CNC and VMC machines and did quality inspection within time using vernier callipers, height gauge, micrometer etc. Used GD&T for understanding CAD drawings.

PROJECT EXPERIENCE

Arizona State University Projects:

- Made a pick and place 5DOF robot arm by doing 3D printing and using ESP32 and C++. Later, smoothened servo movements and operated robot using android app and traced right angled triangle on robot end effector.
- Used ROS and Gazebo in modifying iRobotCreate2 by placing sensors properly. Later did mapping using RTAB-MAP, did 2D autonomous navigation and used python for giving waypoints.
- Controlled temperature using Fuzzy logic temperature control using Simulink and Arduino Leonardo.

Hobby Projects:

- Made stereo vision camera for detection of objects using python, C++, 2 ESP32 cameras etc.
- Made blinking LED lights for a plane by assembling it and using capacitors, resistors, transistors and IC 555.
- Made basic websites using React, Fast API and Flask by modifying existing websites

Savitribai Phule Pune University Projects:

- Did welding of two plates, made parts using injection moulding and lathe machine.
- Designed a Multistage Gear box by doing calculations, found factor of safety and helped team in making drawing of it.

EXTRA CURRICULAR EXPERIENCE

- Playing musical instrument “keyboard” in a competition, rotaract member and conveying information to class students.