Tomas Andrés Olvera Hale

Personal: Tommy.olv6@gmail.com | USA: +1 (619) 513-6843

Chula Vista, CA, USA | GitHub: github.com/lonoty | Porfolio: http://tomas-olvera.me

Objective

Computer engineering student seeking a career in robotics research and development projects. With experience in projects related to mobile vehicles, rovers, and CanSats in the mechanical, programming, and electrical fields having a wide understanding of robotics, its components, and the development stages. Implementing project management fundamentals to deliver a structured execution of projects involving multiple disciplines.

Education

CETYS Universidad
2017 - Present

Computer Engineering

Expected Graduation Date – [06/2021]
Academic Score: 9.1 / GPA: 3.64 (an approximation)

Work Experience

Efficient Manufacturing LLC 2019 -2021

Product Design and Improvement / Motorized Wheelchair Technician

Worked with the president of the company helping with logistics coordination, E-commerce configuration and mainly in the product design and improvements area. Analyzing motorized wheelchairs, reporting, and creating solutions for structural and electrical systems that need improvements to meet with the client's needs and requirements.

SINSEC CA de CV (Mexico) 2017 -2019

Security systems and alarm technician

Worked in the installation and configuration of security systems, intrusion alarms, fire alarms, IP cameras, and access controls for retail centers, banks, and industrial plants.

Academic Experience

Self-Driving Vehicle for Intelligent Ground Vehicle competition
2019 to Present

Project Leader and Head Programmer

An Initiative created by students to develop autonomous vehicles that can navigate around the campus and obstacle courses, planning to compete in the intelligent ground vehicle competition 2021. Working as the project leader in the development and prototyping stages plus head of programming for navigation, and control systems for the physical movements.

In-School Engineering Organization
2017 to Present

Founder and Representative

Created an In-School engineering organization to promote innovation and academic experience for engineering students. Leading to research projects, competitions and community service opportunities, plus inspiring high school students to innovate and become critical thinkers.

ARLISS International Competition
2018 and 2019

Project Leader and Head Programmer

Participated two years in ARLISS competition comeback category, with a team size of 11 students. Taking the role as the mechanical designer, focusing on the CAD design and assembly, plus developed the control algorithm to make the rover navigate in the unknown environment.

CanSat Regional Competition (3rd place) 2018

Project Leader and Head Electrical

Participated in the Baja California, Mexico CanSat competition winning 3rd place. Taking the role of project leader by managing a team of 5 people, as well of being part of the electrical department.

First Member
2012-2016

Head Electrical and CAD Designer

Participated for four consecutive years while studying high school, taking part of the electrical systems and mechanical CAD Design. Having the opportunity to win 1st place at a regional competition.

Research Papers

SPIE Congress 2021
Waiting approval

Title: Autonomous object manipulation and transportation using a mobile service robot equipped with an RGB-D and LiDAR sensor
A continuation of the 2020 research paper using a mobile robot with SLAM and an onboard manipulator to interact in an office environment, creating an automated delivery system that manipulates objects (pick up – drop off).

SPIE Congress 2020
Published

Title: Mapping and navigation in an unknown environment using LiDAR for mobile service robots
A continuation of the 2019 research paper using a 3D LiDAR focused on mobile service robots using SLAM (simultaneous localization and mapping) to navigate in an office with human interactions. https://doi.org/10.1117/12.2568133

SPIE Congress 2019
Published

Title: Autonomous navigation for a differential drive robot in a partially known environment
Research Project using a 2D LiDAR to map the environment and implementing A* path planning algorithm to navigate such environment. Taking role as the team leader and presenter at the optics and applied engineering SPIE congress 2019. https://doi.org/10.1117/12.2528517

Certificates

- Robotics Software Engineer Nanodegree by Udacity
- C++ Developer by Udacity
- CanSat Course by the Mexican Space Agency
- Axis IP camera Certification

Skills

Programming Skills
- C++ - Proficient
- MATLAB – Proficient
- Python – Proficient
- Linux – Proficient
- Robotics Operating System (ROS) – Proficient
- OpenCV – Intermediate
- Git - Intermediate
- Machine Learning - Beginner

Soft Skills
- Self-Taught
- Leadership
- Project Manager
- Dedicated

Electrical Skills
- Arduino Microcontroller – Proficient
- Electrical Circuit Analysis – Proficient
- Electrical Systems for Robotics – Proficient
- PCB design – Intermediate
- STM32 Microcontrollers – Intermediate
- Embedded Electronics – Intermediate

Mechanical Skills
- CAD Inventor – Proficient (w/certification)
- Machining – Proficient
- 3D Printing – Proficient
- CAD SolidWorks – Intermediate
- CNC & Laser cutter - Beginner

Extracurricular activities

We Do & Care (Girls in Engineering)
Organize a community wide event to encourage girls from all ages to immerse into the world of engineering defying stereotypes and cultural barriers.

Tijuana Aeromodelling Club
Member of Tijuana's Aeromodelling club to fly RC airplanes with people form the community that also enjoy flying and aeromodelling.

Robotics mentor and STEM promoter
Help Highschool students building CanSats and FIRSTS teams in the community with programming or electrical guidance.

Languages

- **English** – Fluent
- **Spanish** – Fluent

Citizenship

Dual Citizenship
- Mexican Citizenship
- United States of America Citizenship