

Tomas Andres Olvera Hale

Phone: (619) 943-0721 • Email: Tommy.olv6@gmail.com • Portfolio: <https://tomas-olvera.info/>

Education

Master of Science in Robotics

University of California, Riverside

Expected March 2023

Bachelor of Science in Computer Engineering

CETYS Universidad, Tijuana, Mexico

June 2021

Skills & Certificates

Programming: C/C++, Python, ROS, UNIX, OpenCV

Electrical: Electrical Circuit analysis, STM32 Microcontrollers, Electrical Systems for Robotics

Mechanical: CAD Inventor and SolidWorks, 3D printing, Laser cutting, Machining

Languages: English (Fluent), Spanish (Fluent)

Certificates: Robotics Software (Udacity), C++ Developer (Udacity), CanSat Course (Mexican Space Agency), Computer Vision Nanodegree (Udacity, expected in September 2021)

Robotics Experience

Founder and Representative

January 2017-June 2021

CETYS Universidad Engineering and research club "Quantum"

- Founded a club for engineering students to compete, create projects, and publish research papers.
- Organized multiple events and programs to inspire STEM field to high school students, and younger generations.

Project Leader and Head Programmer

February 2018- August 2019

ARLISS International Competition

- Lead a small team of 11 students to represent Mexico at the ARLISS competition comeback category.
- Head programmer in the robot's navigation system and launch sequence allowing for the robot to safely land on the ground and navigate to the desired location using sensors (GPS, IMU, Barometer) and control systems.

Research papers

January 2019- August 2021

SPIE International congress (one publication per year)

- Published 3 research papers relating to mobile robots, manipulators, and autonomous navigation in an office environment where each year there were improvements using better tools, algorithms, and sensors.
- Researched and implemented different solutions like SLAM, Monte Carlo Localization, trajectory planning, kinematics, perception and grasping algorithms

Head Electrical and CAD designer

January 2012-June 2016

First Robotics "Titanbot 2543"

- Head of the Electrical department integrating all the electrical components of the robot such as motor controllers, wiring. Also developed mechanical parts for the robots with gears, pistons and actuators.

Projects

SPIE Congress 2022 (Early stage of research and development)

- **Title:** *Aerial drone photogrammetry for dirt road recognition using AI and computer vision.*

Motor velocity control system using a microcontroller and ROS | [GitHub](#)

- Develop a control system that senses the rotational speed of a motor using an encoder and a PID to modify the output to sustain a reliable and responsive velocity.

Other Engineering Experience

Efficient Manufacturing LLC (USA)

2019-Present

Product Designer and motorized wheelchair technician

- Product Designer creating CAD designs for wooden products and develop solutions for motorized wheelchairs

SINSEC CA de CV (Mexico)

2017-2019

Security systems and alarm technician

- Installation and configuration of security systems, intrusion alarms, fire alarms, IP cameras, facial recognition systems, and access controls for retail centers, banks, and industrial plants.