Alexis Guijarro

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Skills

Fluent: Python, C, C++, Git, Terminal, Linux, ROS, OpenCV, LaTeX, Doxygen, OpenGL, OpenVR, MCUs, Gazebo
Proficient: Numpy, SymPy, Java, Pandas, Tensorflow, Keras, Jupyter Notebooks, Bash, CMake, C#, PX4, MavSDK, HTML, CSS, JavaScript, CUDA, LabView, OpenMP, Vicon Mocap, FFMPEG, SSH, Docker, NodeJS, JavaScript
In Progress: Rust, ROS2, MavLink, Fortran, Pandoc, Nvidia IsaacSim, Intel Movidius

Education

New Mexico State University — **Las Cruces, NM, USA**
Completed 6 Credits towards a Phd. in Electrical Engineering — Fall 2020

Texas A&M University - Corpus Christi — **Corpus Christi, TX, USA**
MS. in Computer Science — 2018–2020

Universidad La Salle Laguna — **Gomez Palacio, Durango, Mexico**
BS. in Mechatronics Engineering and Process Control Systems — 2013–2018

Experience

Universidad La Salle Laguna — **Gomez Palacio, Durango, Mexico**
Full-Time Faculty Member — Spring 2022–Fall 2023
- Instructed Physics, Control Theory, Electronics and Mathematics courses to undergraduate students
- Represented the university at the nationwide La Salle Engineering Network
- Mentored a robotics team on unmanned aerial vehicles and taught a robotics workshop for high school students

Adjunct Faculty Member — Fall 2021
- Instructed Physics, Control Theory, Electronics and Mathematics to undergraduate students

Texas A&M University - Corpus Christi — **Corpus Christi, TX, USA**
Adjunct Faculty Member — Fall 2019
- Instructed COSC 1330 Programming for Scientists, Engineers, and Mathematicians
- Introduced Science, Engineering and Mathematics students to practical C Programming language

Research Assistant | TAMUCC-CORAL — 2018–2020
- Designed and experimented with multi-agent control systems based on autonomous vehicles
- Provided technical knowledge on laboratory experiments to test robust control strategies
- Contributed to integrate a Test-Bed for control systems evaluation and validation based on Open Sourced and Proprietary technologies such Robot Operating System (ROS), Parrot and Vicon (Motion Capture), producing academical research for conference papers and a journal
- Successfully implemented robust control policies such as H_∞ and system identification algorithms on cyber physical systems
- Built a Mixed Reality environment on top of TAMUCC-CORAL test-bed with OpenGL and OpenVR, ROS and python bindings between Linux and Windows based OS for near real-time communications

Teaching Assistant — Fall 2018
- ENGR 2460 Circuit Analysis I / ENTC 2414 Circuit Analysis I
- Worked as Lab grader and assistant for associate engineering faculty

Ases Laguna — **Torreon, Coahuila, Mexico**
Engineering Intern — Winter 2017
- Automated intial stages of industrial processes for veterinary-grade serum
- Implementated PLC automation to pack and transport veterinary products

DroneLaguna — **Gomez Palacio, Durango, Mexico**
Drone programming and assembly instructor — Aug 2016–May 2018
- Instructed customers to assembly and program drones based on open sourced technologies
- Taught basic concepts for unmanned aircraft systems and provided guidance to academia and corporate staff

Projects

ros_pyparrot: Created a ROS driver for Parrot's Mambo drone around pyparrot library, this resource let's the user connect through BLE up to 8 drones, it includes motion and live-image feed (via RTSP, processed by FFMPEG C Libs) if an onboard camera is provided, among other miscellaneous features.

ros-gopro-driver: Created a ROS driver to be used with GoPro Cameras, from where it can obtain a live feed (via RTSP, processed by FFMPEG C Libs) from the camera and access to multiple actions such capture photos, videos, change modes, and provides feedback to ROS with current status of the camera through a python interface.

Mambo_ROS_Examples: Compiled a repository with most of experiments done at TAMUCC-CORAL with Parrot's Mambo.

Volunteering

Robots LatAm (NPO) **Latin America**

Co-Founder and Organizational Staff Spring 2021–Present

– Organize and assist to schedule meetings to introduce latin american people to engineering fields around robotics, done through low-cost materials and open sourced software/hardware