

Senior Electrical Engineering student at UTEC, Peru. Interested in **AI**, **Computer Vision**, and **Robotics** for global or social issues. Worked on projects related to surgical robotics, autonomous vehicles, machine learning, and control such that they resulted on **six IEEE indexed publications (available here)**. Accepted into selective **AI and Robotics program (RISS)** at **Carnegie Mellon University (CMU)**. Currently, I am working on **Deep Reinforcement Learning** applied on mobile robots for exploration tasks and **Safe Learning** applied on autonomous robots.

EDUCATION

Universidad de Ingeniería y Tecnología - UTEC | ELECTRICAL ENGINEERING

March 2016 - Expected December 2021 | Lima, Perú

Senior Undergraduate Student | Awarded with Full Academic Scholarship

Cum. GPA: 4.00 | GPA in Peruvian scale: 15.86/20.00 | Thesis project: AI-curiosity-driven exploration in mobile robots.

EXPERIENCE

Carnegie Mellon University - Argo AI Center, RISS Program | ROBOTICS RESEARCHER

May 2021 - Present | Lima, Perú

- Working under the supervision of mentors [Qin Lin](#) and [John Dolan](#) on research program.
- Designing and implementing a **safe learning** framework for controlling autonomous mobile robots based on **Control Barrier Function** and **learning approaches**. One pending publication.

UTEC - CONCYTEC | ROBOTICS RESEARCH ASSISTANT

March 2020 - April 2021 | Lima, Perú

- Collaborated in a **two-year government-funded project** to implement a nonlinear controller in a surgical robot platform based on haptic control. | Published **two indexed papers**, one pending. | Tech: ROS, Python, Gazebo.
- Implemented a **hybrid learning controller** for torque-position transformation in manipulator robots
- Designed and implemented a camera framework for feedback sensing using **computer vision** and filtering techniques.

Yale University - Schroers Lab | RESEARCH ASSISTANT

Jan - March 2020 | New Haven, CT, US

- Sponsored by Research Experience for Peruvian Undergraduates | Supervised by [Jan Schroers](#) and Sungwoo Sohn.
- Designed and developed two new alloys with potential mechanical properties for industrial applications.

ISA REP | DIGITAL IMAGE PROCESSING INTERN

Jun - Dec 2019 | Lima, Perú

- Designed and developed two methods for corrosion detection based on **computer vision** and **NN** for decision making.
- Launched the first phase of automatic supervision of **+1000 km powerlines** using **drones** and **supervised learning**.
- Developed framework for **semantic labeling**, classifier training, and GUI prototype. | Tech: scikit, Keras, OpenCV

SELECTED PROJECTS

Autonomous Mobile Robotics | [Code](#)

- Designed and implemented algorithms for **autonomous** motion planning and exploration on mobile robots in real and simulated environments. | Tech: ROS, Gazebo
- Built complete frameworks for mobile robotic applications and **published four papers** showing results.

End-to-end navigation and exploration robotics | [Code](#), [Link](#)

- Developed an actor-critic agent applied on a mobile robot for exploration and navigation tasks. | Tech: Gym, Torch

Image Enhancer | [Code](#)

- Built a model architecture to automate beauty-enhancing of photos using image manipulation. | Tech: TF, scikit .

HONORS AND AWARDS

- 2021 Selected out of 700+ applicants to participate in **CMU's Robotics Institute Summer Scholars (RISS) program 2021**
- 2021 Accepted to participate on **Eastern European Machine Learning Summer School 2021**
- 2020 Selected out of 300+ students by **REPU** to work on nano science research internship at **Yale University**
- 2019 Accepted with financial support in the **International Summer School on Deep Learning for Robot Vision** at Chile

INTERESTS

Deep Learning, decentralized tech, science divulgation, start-up, table tennis, Sherlock Adventures, cooking