MAXIMILIANO ROJAS LEMA

Electronioc Enigeening / Master of Engineering Sciences

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🌐 www.magical-engineering.com

SKILLS

SKILLS

- R&D in Robotics
- R&D in Machine Learning
- Python | SQL
- 3D CAD Design (Fusion 360)
- Robot Prototyping
- PCB Design
- Robot Simulation (Isaac Sim)
- Deep Learning
- Machine Learning
- Teamwork

LANGUAGES

Spanish: Native

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English: intermediate / Fluent

HOBBIES

Reading: Science fiction and biographies.

Sport: BodyCombat

Music: Learning piano

EXPERIENCE

Assistant Robotics Developer | PUCV

📅 Dec 2022 – Jan 2023   📍 Chile

- Designed a humanoid robot for interaction with children with autism spectrum disorder (PUCV university research project).

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Assistant Electronic Developer | Valparaíso Makerspace

📅 Sep 2020 – Dec 2020   📍 Chile

- Designed didactic experiences for introducing electronics.
- Technical assistant for Fondecyt (I+D) project: "New challenges for education in Chile: Support for the independent life of adults with intellectual or developmental disabilities" (1190789).

EDUCATION

Scientific Journal Article Published Q2 WoS | PUCV

📅 2022   📍 International

- Special Issue "Automation Control and Robotics in Human-Machine Cooperation".
- "Easy-to-Use Deep Reinforcement Learning Library for AI-Based Mobile Robots for Isaac Sim" Applied Sciences 12, no. 17: 8429.
- https://www.mdpi.com/2076-3417/12/17/8429

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Master's Degree in Engineering Sciences, Electrical Engineering Mention | PUCV

📅 2020 – 2022   📍 Chile

- Thesis: "Easy-to-Use Deep Reinforcement Learning Library for AI-Based Mobile Robots".
- Grade: 7.0 (scale 1 to 7).
- Recognition: Summa Cumme Laude.

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Degree in Electronic Civil Engineering | PUCV

📅 2015 – 2021   📍 Chile

- Thesis: "Creation of a Service Robot Platform for Deep Learning and Robotics Applications".
- Grade: 7.0 (scale 1 to 7).
- https://hackaday.io/project/181886-2021-aina-humanoid-plataform-ros-robot.

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Assistant Student | Laboratory of Instrumentation and Electronic Systems (LABSEI) PUCV

📅 2018 - 2020 📍 Chile

- Control prototype for robotic surgery simulation.
- https://hackaday.io/project/172262-2019-robotic-surgery-tool-and-simulation

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Assistant Student | PUCV AI and Robotics Laboratory

📅 2015 - 2017 📍 Chile

- Bluetooth control for ROS.
- https://hackaday.io/project/171786-2020-ros-bluetooth-controller-prototype
- SMD circuit charger for 3.3V batteries.
- https://hackaday.io/project/171723-2020-make-every-3v3-device-rechargeable
- Robotic hand controlled by cameras.
- https://hackaday.io/project/172118-2016-robotic-hand-leap-motion

PROJECTS

Proyecto de Robótica | 🌐

- Smartwatch control for ROS2-based robots.
- https://maximilianorojasl.wixsite.com/magical-engineering/es/post/smart-watch-controller-for-ros2-mobile-robots-1

Proyecto de Inteligencia Artificial | 🌐

- Multiple cervical fracture detection with Visual Transformers.
- https://maximilianorojasl.wixsite.com/magical-engineering/es/post/multi-label-visual-transformer-para-detecci%C3%B3n-de-fracturas-en-la-columna-cervical

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Proyecto de Inteligencia Artificial | 🌐

- Classification of human organ tissues.
- https://maximilianorojasl.wixsite.com/magical-engineering/es/post/vision-transformers-para-clasifici%C3%B3n-de-tejidos-de-%C3%B3rganos-humanos

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Proyecto de Robótica | 🌐

- Basic training of a holonomic robot in Nvidia Isaac Sim with Deep Reinforcement Learning.
- https://maximilianorojasl.wixsite.com/magical-engineering/es/post/entrenamiento-b%C3%A1sico-de-un-robot-holon%C3%B3mico-en-nvidia-isaac-sim-con-deep-reinforcement-learning

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Robotics Project | 🌐

- Holonomic Robotic Base based on ROS2 controlled with a video game controller.
- https://maximilianorojasl.wixsite.com/magical-engineering/es/post/base-rob%C3%B3tica-holon%C3%B3mica-basa-en-ros2-controlada-con-mando-de-videojuego