Christian E. Lourido

Queens, NY 11104 ● c.lourido@nyu.edu ● linkedin.com/in/christian-lourido ● louridoc.github.io

Education

New York University, Tandon School of Engineering, NY
Mechatronics, Controls, and Robotics Laboratory

Ph.D. Student in Mechanical Engineering	Expected: December '25	**GPA:** 3.896 / 4.0
Master of Science in Mechatronics and Robotics	December '19	**GPA**: 3.90/ 4.0

Monterrey Institute of Technology and Higher Education, Mexico

Bachelor's in Mechatronics Engineering	December 2011	**GPA**: 3.52 / 4.0

Awards and Honors

- GEM Fellowship - Employer Fellow (Apple Inc.)   2022
- High Performance Academic Scholarship - Tecnológico de Monterrey   2007-2011

Technical Skills

Programming Languages/Libraries:	C/C++, C#, Swift, Python, OpenCV, Open3D
Software and OS:	ROS, Matlab-Simulink, Linux, MacOS, Windows
ML Frameworks:	Pytorch, Tensorflow
CAD Tools:	Autodesk Fusion, Solidworks, CATIA
Game/App development:	Unity, XCode (iOS)
PLC/HMI Programming:	Studio 5000, FactoryTalk, Iconics, WinCC, Foxboro, Ignition

Research Publications

- **Lourido, C**., Waghoo, Z., Wazir, H. K., Bhagat, N., & Kapila, "**Using Capability Maps Tailored to Arm Range of Motion in VR Exergames for Rehabilitation**. In 2024 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) (pp. 1-4). IEEE.

- **Lourido, C**., Su, H., & Kapila, V. "**A Professional Development Program using a Low-Cost Exoskeleton Kit to Support Trainers in Translating Technical Research to Implementable Recommendations**" 2022 ASEE Annual Conference & Exposition.

- Wazir, H. K., **Lourido, C**., Chacko, S. M., & Kapila, V. (2021). **A COVID-19 emergency response for remote control of a dialysis machine with mobile HRI.** *Frontiers in Robotics and AI*, *8*, 612855. (video link)

Work Experience

Intern-Video Engineering Team, **Apple Inc.**, Sunnyvale, California   May 2022 – August 2022
- Designed a real-time image-degradation detector for the Vision Pro headset's camera feed, leveraging a 3D-CNN architecture to support tracking accuracy.
- Developed an end-to-end data pipeline: curated and annotated a large-scale video dataset, automated preprocessing and augmentation using Python (PyTorch + OpenCV).

Automation Engineer, **Applied Control Engineering,** Newark, Delaware   March 2020 – July 2020
- Streamlined testing procedures for critical control loops and Safety Instrumented Systems (SIS), enhancing operational reliability in a chemical plant.
- Executed comprehensive HMI display upgrades from Simatic WinCC Step7 to ABB 800xA across multiple facilities, improving user interface and system efficiency.

Founder & CEO, Heroeng, Ecuador   June 2015 – October 2023
- Developed a proprietary method for repairing mechanical seals exposed to highly corrosive formation water, directly reducing client M&R (Maintenance & Repair) costs.
- Delivered a compelling value proposition, offering effective seal repairs at a fraction of the cost of a new part, which allowed clients to save significantly on operational expenses.
- Directed all business operations, including client acquisition, P&L (Profit & Loss) management, technical service delivery, and strategic vision for the company's entire 8-year lifecycle.

Automation Engineer, **PIL Ecuador SA,** Ecuador and USA   May 2013 – June 2015

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o Developed and deployed Programmable Logic Controllers (PLC) and Human-Machine Interfaces (HMI) applications for oil & gas facilities in Ecuador, California, and Texas.
o Worked on the migration of critical Safety Instrumented Systems (SIS) from legacy to modern PLC platforms for a major facility, significantly enhancing system safety and reliability. (link)
o Designed PLC control logic based on detailed control philosophy documents and cause-and-effect matrices.
o Integrated equipment with PLCs using the Modbus protocol, enabling real-time data monitoring and control from a central SCADA system.
o Performed routine maintenance and support for SCADA/HMI systems to ensure high uptime.

*Project Coordinato*r, **ASTAP Cia Ltda,** Quito, Ecuador   Jan 2012 – Oct 2012
o Successfully managed a high-stakes project to replace and repair a hydrogen reciprocating compressor, vital to refinery operations.
o Ensured seamless project execution by coordinating all phases, including foundation, mechanical parts supply, sensor systems, and operational readiness tests.
o Led personnel and staffing logistics, effectively deploying teams to meet project milestones.
o Bridged the language gap by accurately translating technical engineering manuals from English to Spanish, which was critical for correct installation and operation.

Mechatronics and Robotics Projects

Automatic Pill Dispenser with Amazon Alexa Voice Interface for People with Disabilities   Robots for Disabilities (Fall 2019)
o Modified the hardware of an existing pill dispenser to control it with a Raspberry Pi 3B.
o Programmed an Alexa Skill using Python and the FLASK library to control a pill dispenser with Alexa voice commands.

Autonomous Crane System with Vision   Adv. Mechatronics (Spring 2019)
o Programmed object detection algorithm using OpenCV, Pi-Camera, and Raspberry Pi 3B.
o Programmed the forward and inverse kinematics to control the position of the crane.

Research Experience

Research Assistant, **Mechatronics, Robotics, and Controls Laboratory**   August 2020 – Present
o Research in human-robot interaction using mixed reality

Volunteer Research Assistant, **Artificial Intelligence for Civil Engineering Lab (AI4CE)**   June 2019 – Dec 2019
o Researched urban development for construction automation using Turtlebot 3 and ROS.

Language Skills

- Fluent in written and oral Spanish