



# Daniel Saromo-Mori

MECHATRONICS ENGINEER · AI RESEARCHER AND LECTURER · RESEARCH PAPERS WITH 200+ CITATIONS

Web Portfolio: [www.danielsaromo.xyz](http://www.danielsaromo.xyz) | [DanielSaromo](https://www.linkedin.com/in/DanielSaromo) | [danielsaromo](https://www.youtube.com/channel/UCdanielsaromo) | [Daniel Saromo-Mori](https://www.instagram.com/DanielSaromo-Mori)

## About me

→ I'm Daniel, a mechatronics engineer passionate about AI-powered robot control. My main research interest is *robotics × machine learning: robot learning*. As a result of my research in AI, I have invented the ARP and the ARNN —algorithms that I have presented in six countries. Besides, I have **6+ years of experience** in research and teaching AI, ML, and Data Science. Also, I have **practical experience in Robot Learning**, like my *AI-guided spider robot*, work recognized in the United States with the *Innovation Award* at IMECE 2019.

→ **Language Skills:** English (proficient level), Italian (advanced level), and Spanish (native).

## Education

### M.Sc. in Cybernetics and Robotics, with a Specialization in AI (PRG.AI minor) · Ongoing

Prague, Czechia

CZECH TECHNICAL UNIVERSITY IN PRAGUE (1<sup>ST</sup> IN CZECHIA: [QS ENGINEERING RANKING 2025](#))

Since Sep. 2024

- I have been awarded a **merit scholarship** for excellent study results achieved in the WS of the AY 2024/2025.
- One exchange semester at **Charles University** (Univerzita Karlova), as part of the PRG.AI minor.

### M.Sc. in Automation and Control Engineering · Weighted mark after 3 semesters: 25.6/30

Milan, Italy

POLITECNICO DI MILANO (13<sup>TH</sup> IN THE WORLD: [QS ENGINEERING RANKING 2022](#))

Sep. 2022 - Feb. 2024

### B.Sc. in Mechatronics Engineering & Mechatronics Engineering Professional Degree

Lima, Peru

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ (1<sup>ST</sup> IN PERU: [QS RANKING 2025](#))

03/2014 - 07/2019, 08/2019 - 11/2020

- **Bachelor's average course grade:** 15.70 (Scale: minimum: 0, required to pass: 11, maximum: 20).
- **Academic ranking:** Top fifth of class (6<sup>th</sup> of 32 mechatronics graduates) · Top 6.66% of the students of the Faculty of Science and Engineering.
- **Theses title:** *Intelligent spider robot for detecting anti-personnel metallic landmines in uneven terrain*.
- **Professional Degree Thesis Awards:** - Extraordinary Support Funding for Undergraduate [Research Thesis](#).  
- **Ranking:** Degree thesis unanimously awarded by the tribunal with the qualification of *outstanding*.
- **B.Sc. Thesis Awards:** - [Best bachelor's thesis](#) and poster presentation at the PUCP Mechatronics Workshop of the semester 2019-1.  
- *Innovation Recognition Award* at the *International Mechanical Engineering Congress & Exposition (IMECE)* 2019.
- **Theses advisors:** Dr. Elizabeth Villota and Dr. Edwin Villanueva.

## Professional Experience

### Siemens

Prague, Czechia

APPLICATION ENGINEER FOR IT/OT INTEGRATION (WORKING STUDENT / DPČ)

Since Aug. 2025

- MSc. thesis being done in collaboration with the company.

## Teaching Experience

### - PUCP's Continuing Education Department · Teacher at Specialization Diplomas

Lima, Peru

LECTURER

- Diploma in Development of AI Applications (**Course:** AI for Games): 2019-2, 2020-1, 2020-2, 2021-1, 2021-2, 2022-1, 2022-2, 2023-1, 2023-2, 2024-1, 2024-2, 2025-1, 2025-2, 2026-1.

Since Sep. 2019

- Diploma in Data Analytics (**Course:** Data Analysis Methods for Time Series): 2022-1.

Jun. 2022 - Oct. 2022

### - PUCP's Center for Advanced Manufacturing Technologies (CETAM)

Lima, Peru

LECTURER

**Courses:** - ML for Industry (2020-2, 2021-1, 2021-2, 2022-1, 2022-2, 2023-1, 2023-2);

Sep. 2020 - Sep. 2023

- *Python for Data Science* (2021-1, 2021-2, 2022-1, 2022-2, 2023-1).

Jun. 2021 - Sep. 2023

### - National Meteorological and Hydrological Services (SENAMHI) · Peruvian Government Entity

Lima, Peru

LECTURER

**Course:** Introduc. to AI and ML for National Meteorological and Hydrological Services.

May. 2022 - Jun. 2022

### - PUCP Undergraduate School · Faculty of Science and Engineering

Lima, Peru

TEACHING ASSISTANT

**Undergrad. courses:** AI (2019-1), ML (2019-2), Computer Science Applications (2019-2).

Mar. 2019 - Dec. 2019

## Research Experience

### German Research Center for Artificial Intelligence (DFKI)

Bremen, Germany

GUEST RESEARCHER · REMOTE MODE

Aug. 2020 - Dec. 2020

- **Auto-Rotating Neural Networks (ARNN):** I extended the ARP concept and created a new neural model family named Auto-Rotating Neural Networks. I've implemented dense, recurrent, LSTM, GRU, and convolutional layers with the Auto-Rotating operation; and obtained promising results. *Research advisor:* Dr. Matias Valdenegro-Toro.
- We are testing the implementation of the ARNN, to validate and compare their performance against equivalent models without the Auto-Rotation. Experiments ran in the research center's GPU clusters. Results presented at the *Online Asian Machine Learning School (OAMLS)*.

### PUCP Applied Robotics and Biomechanics Research Group (GIRAB)

Lima, Peru

RESEARCH ASSISTANT

Mar. 2020 - July 2020

- **Smart Sensor Calibration with Auto-Rotating Perceptrons:** In this paper, we applied the ARP to calibrate a wearable force sensor. By changing classic neurons to ARP, we obtained 15x better performance of the neural networks (i.e., lower loss). *Research advisor:* Dr. Elizabeth Villota.

## Honors & Awards

2023	<b>1<sup>st</sup> place</b> , at the Pitch Competition 2023 organized by Entrepreneurship Club POLIMI	Milan, Italy 🇮🇹
2019	<b>LXAI Travel Grant</b> , for attending NeurIPS 2019 to be an oral and poster presenter · 1860 USD	Vancouver, Canada 🇨🇦
2019	<b>Innovation Recognition Award</b> , Old Guard 63 <sup>rd</sup> Annual Oral Competition (World Finals at IMECE) · 250 USD	Utah, U.S.A. 🇺🇸
2019	<b>ASME Travel Award</b> , to represent PUCP and South America at ASME IMECE Finals Competition · 1500 USD	Utah, U.S.A. 🇺🇸
2019	<b>1<sup>st</sup> place + Technical Award</b> , Old Guard Oral Presentation Contest (ASME E-FEST South America) · 850 USD	Lima, Peru 🇵🇪

## Scientific Publications • Currently with more than 200 citations reported in Google Scholar

- [C4] Valdenegro-Toro, M. and **Saromo, D.** “A Deeper Look into Aleatoric and Epistemic Uncertainty Disentanglement”, *LXCV Workshop at CVPR 2022*. Louisiana, U.S.A. 🇺🇸, 2022 · Paper presented in the poster session and was one of the few selected for oral presentation.
- [C3] Bravo, L., **Saromo, D.**, and Villota, E. “Smart Insole Sensor for vGRF Measurement”, *9th International Symposium on Sensor Science*. Warsaw, Poland 🇵🇱, 2022.
- [C2] **Saromo, D.**, Bravo, L., and Villota, E. “Smart Sensor Calibration with Auto-Rotating Perceptrons”, *LXAI Workshop at ICML 2020*. Vienna, Austria 🇦🇹, 2020 · Paper: presented in the poster session and selected for oral presentation.
- [C1] **Saromo, D.**, Villota, E., and Villanueva, E. “Auto-Rotating Perceptrons”, *LXAI Workshop at NeurIPS 2019*. Vancouver, Canada 🇨🇦, 2019 · Paper presented in the poster session and was one of the few selected for oral presentation.
- [T1] **Saromo, D.** “Intelligent spider robot for detecting anti-personnel metallic landmines in uneven terrain”, *Pontificia Universidad Católica del Perú*. Lima, Peru 🇵🇪, 2020 · Thesis published in Spanish. English abstract available: [link](#).

## Talks & Presentations

Oct. 2024	<b>Pitch: Auto-Rotating Neural Networks</b> , Dny AI: AI-focused series of events taking place across Czechia	Prague, Czechia 🇨🇪
June 2022	<b>Paper exposition: A Deeper Look into Aleat. and Epist. Uncert. Disentang.</b> , Speaker at LXCV CVPR	New Orleans, U.S.A. 🇺🇸
Nov. 2021	<b>Poster presentation: Auto-Rotating Neural Networks</b> , Online Asian Machine Learning School at ACML	Singapore, 🇸🇬
Jul. 2020	<b>Paper exposition: Smart Sensor Calibration with Auto-Rotating Perceptrons</b> , Speaker at LXAI ICML	Vienna, Austria 🇦🇹
Dec. 2019	<b>Paper exposition: Auto-Rotating Perceptrons (ARP)</b> , Speaker at LXAI NeurIPS	Vancouver, Canada 🇨🇦

## Continuing Education

Sep. 2025	<b>Summer School: How to be a (Startup-) CTO</b> , Hasso Plattner Institute (HPI)	HPI Potsdam
Jun. 2025	<b>7<sup>th</sup> International Summer School of AI and Games</b> , by Georgios Yannakakis and Julian Togelius	gameaibook.org
Aug. 2024	<b>Robot Operating System (ROS) (Grade: 20/20)</b> , PUCP Center for Engineering Vinculation (FABRICUM)	FABRICUM PUCP
Nov. 2023	<b>Disaster Risk Monitoring Using Satellite Imagery</b> , NVIDIA Deep Learning Institute	NVIDIA DLI
Aug. 2022	<b>Oxford Machine Learning Summer School</b> , Oxford University & AI for Global Goals	Oxford University
Jun. 2022	<b>AutoCAD - Level: Intermediate</b> , National University of Engineering (UNI)	UNI
Mar. 2022	<b>Solidworks - Level: Intermediate</b> , National University of Engineering (UNI)	UNI
Nov. 2021	<b>Online Asian Machine Learning School</b> , Asian Conference on Machine Learning (ACML)	ACML 2021
Jul. 2021	<b>Robot Operating System (ROS)</b> , Center for Advanced Manufacturing Technologies (CETAM)	CETAM PUCP
Nov. 2020	<b>Scrum Master Certification Training</b> , IEEE Ricardo Palma University Student Branch	IEEE Peru Section
Jul. 2019	<b>Getting started with AI on Jetson Nano</b> , NVIDIA Deep Learning Institute	NVIDIA DLI
Nov. 2018	<b>PyTorch Scholarship Challenge</b> , Udacity / Facebook	Udacity / Facebook
Apr. 2018	<b>Machine Learning for Data Science and Analytics</b> , Columbia University	edX
Feb. 2017	<b>PCB design with international standards oriented to manufacturing</b> , AlDelta Technologies	AlDeltaTec.com
May 2016	<b>Embedded Systems – Shape the World</b> , University of Texas at Austin	edX
May 2015	<b>Introduction to Robotics</b> , Queensland University of Technology	QUT MOOC

## Technical and Soft Competencies

**Technical tools** **Robotics:** ROS-1. | **Automation:** TIA Portal (PLC/HMI). LabView. | **Web:** HTML, CSS, Jekyll. | **CAD/CAE:** *Mechanics:* Inventor, SolidWorks, AutoCAD. *Electronics:* EagleCAD, Altium Designer, Circuit Maker, Proteus, B2 Spice, NI Multisim. | **Embedded Systems:** ATmega328P, ATmega2560 (Arduino IDE); Raspberry Pi (SBC and RP2040); Jetson Nano. | **Coding:** Python, MicroPython, C, C++, MATLAB, VBA (for Excel),  $\LaTeX$ . | **Frameworks:** Linux, Git, Tensorflow, Keras, Scikit-Learn, PyTorch, NumPy, Pandas, Seaborn, Matplotlib, Plotly, OpenCV, OpenAI Gym, PyDuino Bridge.

**Technical skills** **Mechanics:** Parametric 3D modeling and assembly. Technical drawing. **Electronics:** Schematic drawing. PCB design, assembly, and testing. Excellent soldering skills (THT and SMT). | **Automatic Control:** Classical and state-space. | **Artificial Intelligence and Machine Learning:** Deep Learning (MLP, CNN, ARNN, ARP). Search algorithms and heuristics. Bio-inspired optimization (ABC, ACO, and PSO). Decision Trees. Random Forests. SVM. Clustering. PCA. Ensemble Learning. Transfer Learning. Deep Reinforcement Learning (DQN, DDQN). Computer Vision. Image Segmentation. Image Style Transfer.

**Soft skills** Strong abilities in public speaking, teaching, teamwork, and leadership. Maker spirit. Curiosity and perseverance.