Pedro Vitor Soares Gomes de Lima

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EDUCATION

Federal University of Pernambuco   Recife, Brazil
MSc in Biomedical Engineering   *Mar 2021 – Mar 2023*

Thesis title: Clinical decision support system for the diagnosis of skin cancer and Hansen's disease using digital image analysis and deep neural networks.

Federal University of Pernambuco   Recife, Brazil
BSc in Control and Automation Engineering   *Apr 2014 – Nov 2020*

Undergraduate thesis title: Building a MATLAB application for repetitive controller projects.

National Polytechnic Institute of Toulouse   Toulouse, France
Electrical and Automation Engineering   *Aug 2018 – Jul 2019*

Spent a full academic year as a Visiting Undergraduate Student.

RESEARCH EXPERIENCE

Federal University of Pernambuco   Recife, Brazil
Graduate Student   *Mar 2021 – Mar 2023*

- The aim of my project was to investigate the use of deep neural networks for skin lesion image analysis and classification. The outcome was a clinical decision support system for the early diagnosis of skin cancer and Hansen's disease, considering reports from healthcare professionals.
- Participated in a research group and collaborated in managing the machine learning experiments to support the diagnosis of Covid-19 based on hematological and biochemical tests.
- Main techniques employed: Supervised and Unsupervised Learning, Transfer Learning, Feature Selection, Resampling, and Statistical Analysis.

Federal University of Pernambuco   Recife, Brazil
Undergraduate Student   *Jan 2018 – Jul 2018*

- Participated in a robotics team and collaborated in the development of an open-source line-following robot simulator, resulting in publications on conference proceedings.
- Managed the experiments comparing the behavior of the real robot with our simulator and conducted the application of the chosen evaluation methodology.
- Main techniques employed: Software Development, Kinematics and Dynamics Modeling, and Statistical Analysis.

SELECTED WORK EXPERIENCE

Weduu Soluções em Data Analytics   São Paulo, Brazil (Remote)
Data Integration Analyst   *Jun 2023 – Present*

- Develop, test, and maintain data integration flows to automate order entry for retail companies.
- Ensure compliance with data governance policies, improve data quality, and document processes.
- Skills: Python, SQL, Shell Scripting, Cloud Computing, Pentaho.

beAnalytic Business Intelligence   Natal, Brazil (Remote)
Data Engineer   *Jul 2022 – Jun 2023*

- Provided consulting and outsourcing BI and data engineering services, serving companies from 15+ segments.
- Developed, tested, and maintained data pipeline architectures to unify information from different source systems.
- Collaborated with business intelligence analysts on developing reporting, dashboards, and other BI solutions.
- Skills: Python, SQL, Apache Airflow, Cloud Computing, CI/CD.

SKILLS

Programming: Python, C, Shell Scripting, SQL, MATLAB.

Machine Learning: Scikit-Learn, Keras, TensorFlow, Weka.

Technologies: Git, Docker, Cloud Computing.

Languages: Portuguese (Native), English (Professional), French (Professional).

Interpersonal: Teamwork, Adaptability, Active listening.

Publications

- Book chapters

Nunes IB, <u>Lima PVSG</u>, et al. **Clinical Decision Support in the Care of Symptomatic Patients with COVID-19: An Approach Based on Machine Learning and Swarm Intelligence.** Swarm Intelligence Trends and Applications. CRC Press, 2022.

- Journal articles

<u>Lima PVSG</u>, et al. **Zero-phase FIR Filter Design Algorithm for Repetitive Controllers.** Energies, 2023.

- Conference Proceedings

<u>Lima PVSG</u>, et al. **Improving Early Robotics Education Using a Line-Following Robot Simulator.** 15th IEEE Latin American Robotic Symposium, Brazil, 2018.

Fonseca JR, <u>Lima PVSG</u>, et al. **Turning Pololu 3Pi into a Multi-Programming Platform.** 15th IEEE Latin American Robotic Symposium, Brazil, 2018.

Maggi LO, Teixeira JMXN, Cajueiro JPC, Fonseca JR, <u>Lima PVSG</u>, et al. **3DJPi: An Open-Source Web-Based 3D Simulator for Pololu's 3Pi Platform.** 21st Symposium on Virtual and Augmented Reality, Brazil, 2019.

Fonseca JR, Bezerra MHRA, <u>Lima PVSG</u>, et al. **Open-Source Simulator for Pololu 3Pi Platform.** XXII Brazilian Conference on Automation, Brazil, 2018. Original in Portuguese.

Grants and Funding

- Grants

CAPES: Study abroad scholarship granted to outstanding undergraduate students supported by the French and Brazilian governments through the BRAFITEC program. Sep 2018 - Jun 2019.

PROEXC/UFPE: Development of academic teaching, research, and extension activities in state public schools through the Institutional Research, Education and Extension Program (PIPEX). Feb 2017 - Dec 2017.

- Projects

PIBEXC/UFPE: Coordination of the Brazilian Robotics Olympiad in Pernambuco, fully free for participants and annually organized by hundreds of volunteers from several Brazilian universities. Apr 2018 - Dec 2018.

PIBEXC/UFPE: Member of the Organizing Committee of a fully free and non-profit robotics event featuring competitions and presentations (RoboticPE 2018). Mar 2018 - Dec 2018.

Other relevant Experience

- Teaching

Undergraduate Teaching Assistant: Prepared and taught weekly 1-hour review and problem-solving sessions for 50+ undergraduates in the Control Systems Engineering course. Aug 2019 - Dec 2019.

University Extension Program: Taught early robotics concepts to high school students from state schools in a small town located +100 km from the university. Feb 2017 - Jun 2018.

Training Courses: Taught in courses offered by departments of the university during school breaks: Arduino (60 hours), LaTex (30 hours), and MATLAB (4 hours). Jul 2017 - Feb 2022.

Private Tutor: Math and calculus tutoring for high school and college students. Jan 2017 - Jun 2018.

- University Teams

Robotics Team Leader: Created and monitored the team's strategic plan (30+ members), participated in national competitions, promoted events, and researched in the field of robotics. Feb 2016 - Jun 2018.

Aeromodelling Team Member: Conceived, designed, and fabricated a radio-controlled cargo aircraft to participate in the SAE Brasil Aero Design competition. Jan 2015 - Nov 2015.