Ana Letícia Garcez Vicente

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Education

Carnegie Mellon University 2024 - Present
Visitor Student and Researcher *Pittsburgh, PA - USA*
Machine Learning Department
- Advisor: Dr. Leila Wehbe

University of São Paulo 2023 - Present
M.S. in Computer Science and Computational Mathematics - Machine Learning *São Carlos, SP - BR*
Institute of Mathematical and Computer Sciences (ICMC)
- GPA: **4.0**/4
- Advisor: Dr. André Carlos Ponce de Leon Ferreira de Carvalho

University of São Paulo 2018 - 2022
Bachelor of Mechatronics Engineering *São Carlos, SP - BR*
- GPA: **9.1**/10
- **First-Class Honour**

Research Experience

brainML - Carnegie Mellon brAIn Sept 2024 – Present
Advised by Dr. Leila Wehbe
Carnegie Mellon University (CMU)
- Decoding speech from cross-modality non-invasive brain recordings (fMRI and MEG)
- CLIP-based model, expanding from two-domain framework to connect three (speech, fMRI and MEG data)

Analytics Lab Feb 2023 – Sept 2024
Advised by Dr. André Carlos Ponce de Leon Ferreira de Carvalho
University of São Paulo (USP)
- Classifying autism-related fMRI signals using Graph Neural Networks
- Dimensionality reduction by RNNs

Integrated Pattern Recognition and Biometrics Lab (iPRoBe) Nov 2020 – Dec 2022
Advised by Dr. Arun Ross and Dr. Luis Gustavo Nonato
Michigan State University
- Bachelor Thesis Title: "Autoencoder based methodology for spoofing fingerprints generation"

Study of Singularities on Deep Neural Networks Dec 2019 – Dec 2022
Advised by Dr. Arun Ross and Dr. Raimundo Nonato Araujo dos Santos
University of São Paulo and Michigan State University
- Studied, both theoretically and practically, more deeply the latent space and the singularities present in it to understand adversarial examples

USP Robotics Center (CROB) Aug 2021 – Jan 2022
Advised by Dr. Adriano Almeida Gonçalves Siqueira
University of São Paulo
- Undergraduate project: building an embedded algorithm to detect and analyze the beer foam through computer vision.

Mathematical Analysis and Linear Algebra Aug 2018 – Mar 2020
Advised by Dr. Hildebrando Munhoz Rodrigues and Dr. Marcio Fuzeto Gameiro
Universidade de São Paulo
- Scientific Initiation: Seminars, problem-solving, and discussions.

Publications

Explainable LightGBM Approach for Predicting Myocardial Infarction Mortality 2023
Ana Letícia Garcez Vicente, Roseval Donisete Malaquias Junior, and Roseli A. F. Romero - CSCI'23

Teaching

Graduate Teaching Assitant — University of São Paulo

- Image Processing and Analysis — 2024
  Instructor: Prof. Moacir Antonelli Ponti
- Artificial Neural Networks and Deep Learning — 2023
  Instructor: Prof. Moacir Antonelli Ponti
- Machine Learning Applied to Problems — 2023
  Instructor: Dr. André Carlos Ponce de Leon Ferreira de Carvalho

Undergraduate Teaching Assitant — University of São Paulo

- Analytical Geometry — 2020
  Instructor: Prof. Raimundo Nonato Araujo dos Santos
- Linear Algebra — 2020
  Instructor: Prof. Márcia Ferderson
- Introduction to Robotics — 2019
  Instructor: Prof. Marcelo Becker

Classes Attendend

Carnegie Mellon University — 2024

- Representation Learning
- Convex Optimization
- Generative AI

Industrial Experience

Artificial Intelligence Intern — Set 2021 – Dec 2021
Xmobots — *São Carlos, SP - BR*

- Coleted a database and applied an Autoencoder for semantic segmentation of aerial images collected by drones to identify deforestation and flooding at Brazilian Amazon

Awards

- **Research Internship Abroad Scholarship** by FAPESP — 2024-2025
- **Masters Scholarship** by FAPESP — 2023-2025
- **First-Class Honor** by CREA-SP Formação Profissional — 2022
- **First Class Honor** by Instituto de Engenharia — 2022
- **Scientific Initiation** by FAPESP — 2021-2022
- **BRAFITEC** merit Scholarship for double degree program at Centrale Supelec (Refused) — 2020

Talks

IANS (AI, Neuroscience and Healthy) - UFF (Federal Fluminense University) — 2024
"Introduction to Convolutional Neural Networks"

EESC (São Carlos School of Engineering) - USP — 2023
"Introduction to Machine Learning"

Center for Mathematical Morphology - MINES Paris — 2022
"Computer vision analysis of the parameters of a beer foam bubble"

SEMATRON (Mechatronic Engineering Week) — 2022
"Roundtable: Scientific Initiation"

SIICUSP (USP International Symposium on Scientific and Technological Initiation) — 2022
"Autoencoder for Fingerprint Reconstruction"

SIICUSP (USP International Symposium on Scientific and Technological Initiation) — 2021
"A study of the decision boundary in the domain (input) of classifier functions"

Service

Reviewing 2024
- Brazilian Symposium on Computing Applied to Health (SBCAS)

Board of Examiners: Undergraduate Thesis 2024
- Natthan Camargo, EESC - USP (Mechatronics Engineering)

Volunteer Tutor: Programming Girls USP 2022 - 2023
- Introducing and Teaching programming for young high school girls

Voluteer Teaching: Calculus Mini-Course 2021
- Created and ministred a mini-course to help new mechatronics engineering students

Leadership: Academic Secretariat for Mechatronic Engineering 2020-2021
- Led a team managing finances and product oversight

Schools and Workshops/Courses Attended

Summer School on Biometrics – *IAPR* 2021

Conference on Computer Vision and Pattern Recognition (CVPR) 2021

Technical Skills

Programming Languages: Python, MATLAB, C, Assembly
ML: Pytorch, Geometric Pytorch, Scikit-Learn, Tensorflow
Other Computational Skills: Linux, Git, Biometrics, Graphs
Languages: Portuguese (native), English (advanced), French (intermediate), and Spanish (beginner)