Marcelo Eduardo Pederiva

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EXPERIENCE

School of Electrical and Computer Engineering (University of Campinas) **2022**
Student Supervisor (Voluntary)
- Proposed Machine Learning projects for undergraduate students
- Supervised undergraduate research and Final paper projects

Congress of the Institutional Program of Scientific Initiation Scholarships (University of Campinas) **2021**
Evaluator of Machine Learning projects

Virtual University of São Paulo **2021**
Professor-Assistant
- Monitored and provided feedback to students
- Supervised undergraduate students
- Corrected assignments and exams

ACADEMIC BACKGROUND

University of Campinas **Mar 2020 - Current**
Ph.D., School of Electrical and Computer Engineering
- 4.0/4.0 GPA
- Title: A Single Neural Network Sensor Fusion for Camera, LIDAR, and RADAR.
- The development of a 3D Object Detection model fusing the information of Camera, LIDAR, and RADAR sensors using a single Neural Network. During the program, I already developed a competitive Monocular 3D Object Detection.

University of Campinas **Mar 2018 - Fev 2020**
Masters, School of Mechanical Engineering
- 3.8/4.0 GPA
- Title: Vision-based Landmark Identification for Autonomous Navigation.
- I implemented Sensor Fusion (GPS-IMU-Odometry) for localization, Lane Line Identification, and applied 2D Object Detections models (YOLO, SSD, and Fast RCNN) for detecting references in off-road driving for autonomous vehicles.

University of Campinas **Mar 2011 - Jun 2017**
Bachelor's degree, "Gleb Wataghin" Institute of Physics

COURSES/CERTIFICATIONS, SKILLS & APPLICATIONS

- **Courses/Certifications:** Self-Driving Engineering, Machine Learning, Topics of Machine Learning, Neural Networks, Deep Learning with TensorFlow, Computer Graphics, Using Python to Access Web Data, Python Data Structures, Programming for Everybody, Data Visualization with Python.
- **Skills:** Python, C/C++, Matlab, Linux, Git, LaTeX, OpenGL, Keras, Tensorflow, Numpy, OpenCV, Pandas, Matplotlib, Sklearn, Pytorch
- **Applications:** Machine Learning, Deep Learning, Computer Vision, Sensor Fusion, Image Classification, Regression, 2D Object Detection, 3D Object Detection, Semantic Segmentation, Times Series Forecasting, Autoencoders, Reinforcement Learning, Artificial Intelligence.

LANGUAGES

- **Portuguese:** Native
- **English:** Advanced (C1)
- **German:** Basic - Learning (A1)

PUBLICATIONS

- Multimodal Early Raw Data Fusion for Environment Sensing in Automotive Applications. Eurographics 2022 - Posters. The Eurographics Association, 2022. Link
- A Fusion Approach for Pre-Crash Scenarios based on Lidar and Camera Sensors. In: 2021 IEEE 93rd Vehicular Technology Conference (VTC2021Spring), 2021. p. 1. Link
- Reference Detection for Off-road Self-Driving Vehicles Using Deep Learning. In: The Sixteenth International Conference on Autonomic and Autonomous Systems, 2020, Portugal. ICAS 2020, 2020. p. 97-102. Link