

Renan Matheus da Silva Florencio

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EDUCATION

B.S. in Computer Engineering

Campinas, SP. Feb 2022 – July 2027

Universidade Estadual de Campinas (Unicamp) - GPA: 3.5 / 4

RESEARCH EXPERIENCE

Purdue University

Undergraduate Student Researcher

West Lafayette, IN. Jan 12 2026 – May 12 2026

Researching large language models agent for equivalence between optimization problems through the PONTES Mobility Program.

- Investigating LLM-based agents for formal reasoning about optimization problems;
- Developed Lean 4 templates to analyze equivalence between LP and MILP formulations;
- Applied agent-assisted theorem proving to support structured mathematical reasoning.

Universidade Estadual de Campinas (Unicamp)

Undergraduate Student Researcher

Campinas, SP. Aug 24 2024 – Dec 2025

Researching Synthesis of Inertial Data for Classifying Drivers with Multiple Behavior Patterns in association with the National Council of Scientific and Technological Development (CNPq), funded by the Ministry of Science and Technology in the context of H.IAAC (Hub of Artificial Intelligence and Cognitive Architectures).

- Designed and evaluated inertial sensor data synthesis techniques;
- Developed Python scripts to automatically generate driver routines and behaviors using LLMs;
- Used Random Forest, SVM, and XGBoost to classify behavior, and t-SNE to visualize data;
- Contributed to the creation of a standard baseline for the Driver Behavior Recognition field.

PERSONAL PROJECTS

Data Structure Problems

Solved problems in C involving pointers, heaps, queues, graphs, linked lists, matrices etc.

Credit Card Fraud Detection

Preprocessed data and applied machine learning methods to classify an unbalanced dataset.

Computer Vision

Applied computer vision techniques using Python and OpenCV to stitch a panorama.

ACCOMPLISHMENTS

Published Paper, “Fooling the Model, Failing the Road: Benchmarking Inertial Sensor Fidelity in Driving Simulators”

[2025 National Meeting on Artificial and Computational Intelligence \(BRACIS/ENIAC\)](#). [Repository](#)

Presentation, Driver Behavior Classification based on Inertial Data

XXXIII Scientific Initiation Meeting of Unicamp. [Repository](#)

Presentation, XVI Department of Computing and Automation Meeting

Faculty of Electrical and Computer Engineering – Unicamp.

SKILLS & LANGUAGES

Skills: SciPy, Jupyter, Matplotlib, Wandb, Numpy, Pandas, TensorFlow, C/C++, Git, GitHub.

Languages: Native Portuguese | Fluent English | Intermediate French | Intermediate Spanish.