



# LUIZ GUSTAVO TAVARES

## Electronic and Computer Engineer and Patent Specialist

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### PRACTICE AREAS

- Litigation
- Patents

### LANGUAGES

- Portuguese
- English
- French

### BIOGRAPHY

Luiz Gustavo Tavares is an Electronics and Computing Engineering engineer with a strong academic background and extensive research experience in machine learning, signal processing, and computer vision. He holds a M.Sc. in Electrical Engineering at the Federal University of Rio de Janeiro (UFRJ - COPPE), with a research on comparative performance of HEVC-based codecs, and is a current Ph.D. candidate in Electrical Engineering at the Federal University of Rio de Janeiro (UFRJ - COPPE), focusing on advanced techniques for anomaly detection and deep learning applications. Luiz has collaborated on projects with major industry players such as Petrobras, Tidewise, and the Brazilian Army Technology Center, contributing to innovations in seismic data processing, oil spill detection, and radar systems. He is proficient in Python, C/C++, and MATLAB, and fluent in Portuguese, English, and French.

### PROFESSIONAL HIGHLIGHTS

- Research assistant at the Federal University of Rio de Janeiro, in collaboration with Petrobrás, on deep Learning and machine learning techniques for seismic data denoising (2024 – present);
- Research assistant at the Signal, Multimedia and Telecommunications Lab of the Federal University of Rio de Janeiro, in collaboration with Tidewise/Repsol, on anomaly detection, machine learning and signal processing techniques to detect and classify oil spills in the sea (2021-2023);
- Research assistant at the Signal, Big Data Methodologies Applied to Process Optimization Lab of the Federal University of Rio de Janeiro, in collaboration with Petrobras, on the use of signal processing and advanced prediction techniques to perform modeling of petroleum refining plants using data-driven techniques (2019-2021).

### AFFILIATIONS

- Member of the Academic Committee of the Brazilian Bar Association – Indaiatuba (OAB/SP).

## EDUCATION

- Doctor's Degree (Ph.D.), Electrical Engineering, Federal University of Rio de Janeiro – UFRJ (ongoing);
- Master's Degree (M.Sc.), Electrical Engineering, Federal University of Rio de Janeiro – UFRJ (2015);
- Bachelor's Degree (B.Sc.), Electronic and Computer Engineering, Federal University of Rio de Janeiro – UFRJ (2015).

## PUBLICATIONS

- L. G. C. Tavares, A. F. Da Silva, R. Padilla, L. A. Thomaz, S. L. Netto, and E. A. B. Da Silva, "Pixel-based change detection in moving-camera videos using twin convolutional features on a data-constrained scenario," *IEEE Access*, vol. 13, pp. 123 613–123 629, 2025;
- L. G. C. Tavares, W. L. Passos, B. C. Martins, M. d. P. Rodrigues, S. L., and E. A. B. Da Silva, "Pixel-level detection and classification of marine oil spills in aerial imagery with annotation uncertainty handling," *Marine Pollution Bulletin*, vol. 223, p. 118975, 2026. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0025326X25014511>;
- T. L. B. Dias, L. G. C. Tavares, R. Padilla, A. F. da Silva, L. A. Thomaz, S. L. Netto, and E. A. B. da Silva, "Siamese networks for bounding-box to silhouette annotation of video databases," in *Anais do Simpósio Brasileiro de Telecomunicações e Processamento de Sinais*, Jan. 2020;
- F. M. L. Ribeiro, J. F. L. de Oliveira, A. G. Ciancio, E. A. B. da Silva, C. R. D. Estrada, L. G. C. Tavares, J. N. Gois, A. Said, and M. C. Martelotte, "Quality of experience in a stereoscopic multiview environment," *IEEE Transactions on Multimedia*, vol. 20, no. 1, pp. 1–14, 2018;
- F. M. L. Ribeiro, J. F. L. de Oliveira, A. G. Ciancio, E. A. B. da Silva, L. G. C. Tavares, J. N. Gois, C. D. Estrada, A. Said, and B. Lee, "Impact of angular view density on the user experience in a multiview interactive 3d environment," in *International Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM)*, January 2014.