

Gabriel Bromonschenkel

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Education

Federal Institute of Espírito Santo (IFES)

M.Sc. in Applied Computing (Top 5% Latin America higher education institution in Webometrics)

Serra, Brazil

2023 – 2025

- **Thesis:** Cross Native–Translated Evaluation of Transformer-Based Vision Models for Brazilian Portuguese Image Captioning.
- **Supervisor:** Hilário Tomaz Alves de Oliveira, Ph.D., and Thiago Meireles Paixão, Ph.D.
- **Note:** Completed degree part-time while working as a full-time Data Scientist.

Federal University of Espírito Santo (UFES)

B.Sc. in Computer Engineering (Top 8% World higher education institution in EduRank)

São Mateus, Brazil

2017 – 2022

- **Final Project:** Graph Neural Networks for Recommendation Systems.
- **Supervisor:** Leonardo José Silvestre, Ph.D.

Research Experience

Imaging, Vision and AI Laboratory (LIVIA) - ÉTS

Visiting Researcher (Top 6 Canada computer science institutions for computer vision in CSRankings)

Montreal, Canada

Sep 2025 – Oct 2025

- Researched Vision-Language Models (VLMs) at the École de Technologie Supérieure (ÉTS).
- Optimized 7B+ parameter VLMs, such as Llama and Phi-3 for vision, using LoRA, QLoRA, and 4-bit Quantization.

Computational Intelligence Laboratory (LAICSI) - IFES

AI Research Assistant

Serra, Brazil

Sep 2023 – Dec 2025

- Led research on multimodal Transformers for Portuguese; analyzed translation bias in multimodal training.

University of São Paulo (USP)

Undergraduate AI Researcher (Top 0.4% World higher education institution in EduRank)

São Paulo, Brazil

Jul 2020 – Dec 2021

- Researched the union of ML and Ontologies for psychiatric analysis at Brazil's top-ranked university.

Federal University of Espírito Santo (UFES)

Undergraduate AI Researcher

São Mateus, Brazil

Aug 2019 – Aug 2021

- Applied Convolutional Autoencoders for Smart Grid Load Identification.
- Investigated the junction of Convolutional Neural Networks and Extreme Learning Machines for face recognition.

Publications

A Comparative Evaluation of Transformer-Based Vision Encoder-Decoder Models for Brazilian Portuguese Image Captioning

SIBGRAPI 2024

G. Bromonschenkel, T. M. Paixão, H. Oliveira

Accepted / Published

- SIBGRAPI is the premier Brazilian Conference on Graphics, Patterns and Images (Top 1 in Latin America). DOI: <https://doi.org/10.1109/SIBGRAPI62404.2024.10716325>.

Brazilian Portuguese Image Captioning with Transformers: A Study on Cross-Native-Translated Dataset

JBCS 2025

G. Bromonschenkel, A. L. Koerich, T. M. Paixão, H. Oliveira

Accepted

- Journal of the Brazilian Computer Society (JBCS) is a high-impact journal covering state-of-the-art Computer Science research in Brazil. DOI: <https://doi.org/10.48550/arXiv.2602.00393>.

Professional Experience

Banco do Brasil (consultant by Stefanini)

Data Scientist (*Largest public bank in LATAM*)

Brasília, Brazil

Apr 2023 – Present

- Designed a clustering model for talent discovery; doubled internal IT hiring capacity.
- Engineered end-to-end OCR pipeline for fraud detection, increasing audit coverage by 15%.
- Architected a recommendation system for the investment news platform.
- Implemented causal inference and multi-armed bandits methods for debt renegotiation experiments.

Tok&Stok

Data Scientist (*Largest home & furniture company in Brazil*)

São Paulo, Brazil

Jun 2022 – Mar 2023

- Improved a Slack bot feature for anomaly detection, reducing business complaints by 30%.
- Developed a Slack bot feature for Power BI automation, lowering costs by removing paid licenses.
- Integrated CI/CD for BI, enabling versioning and automated rollbacks for 75% of company reports.
- Managed data marts in Azure Analysis Services, ensuring >90% data integrity during a complex business transitions.

Tok&Stok

Data Science Intern

São Paulo, Brazil

Oct 2021 – May 2022

- Conducted data modeling tasks to feed BI reports and an app to rank sellers' performance.
- Built reports and data analysis about customer budgets, sales performance, store performance, and product discounts.
- Pioneered regression strategies to solve sales forecasting and to analyze goal metrics.

Volunteer

Computer Engineering Academic Center (CAEC) - UFES

Sao Mateus, Brazil

President Director

Dec 2020 - Dec 2021

- CAEC is a university student entity. The roles as CAEC president include: guiding the computer engineering students, organizing events, looking for partners, leading the academic center representatives, and working with the Computer and Electronic Department (DCEL) on behalf of students.

CompTalk - UFES

Sao Mateus, Brazil

Event Organizer

2021

- CompTalk is an event where IT speakers discuss their careers and university experiences. The tasks as an organizer include setting up the stage (presentation environment), inviting panelists, making partnerships, and planning the event.

Oriente Covid ES HUCAM UFES

Vitoria, Brazil

Operational Director

Apr 2020 - May 2021

- It is a project founded by professors/doctors from the University Hospital of the Federal University of Espírito Santo (UFES). Oriente Covid ES HUCAM UFES provides remote advisory about COVID-19 to people in general. Roles as an operational director: providing IT support and managing the telecommunication tools.

Competitive Programming Training - UFES

Sao Mateus, Brazil

Internal Volunteer

Feb 2020 - Dec 2020

- The Competitive Programming Training is an extension project of the UFES, campus São Mateus, destined for students' preparation for competitive programming contests. In this project, we organized contests, and studies focused on data structures, graph theory, and algorithms. The group engaged in famous contests such as the ICPC International Collegiate Programming Contest and Google Hashcode.

EEEFM: "Nair Miranda" Student Assistance Program

Fundão, Brazil

Physics and Math Tutor

2016

- The Student Assistance Program at EEEFM: "Nair Miranda" High School is a teaching program where volunteers with a strong background in specific subjects assist the learning of students at EEEFM: "Nair Miranda" High School.

Federal Institute of Espírito Santo (IFES) Student Assistance Program

Aracruz, Brazil

Physics Tutor

2016

- The Student Assistance Program at IFES is a teaching program where students with a strong background in specific subjects assist the learning of other students, and provide support to professors in institute activities from IFES.

Honors and Awards

- **Finalist (1st in Scoring):** Data Battle by Itaú Bank (Largest bank in LATAM), 2022.
- **Ranked 4th:** USP Programming Marathon (SEMCOMP), 2021.
- **Ranked 2nd:** Google Hash Code (Stanford Hub), 2021.
- **Ranked 10th (1st in São Mateus UFES campus):** Computers Programming Tournment 18 (TOPCOM 18), 2021.
- **Honorable mention:** Programming Marathon ICPC South America/Brazil First Phase, 2020.
- UFV SI (25th Computer Week) Programming Marathon competitor, 2020.
- Rocketseat Experience I (Panels, Workshops, and Hackathon) competitor and listener, 2019.

Solutions and events description in <https://github.com/gabrielmotablma/CP000-competitive-programming>.