Caio Seda Bittencourt

Mail - Github - Linkedin

About Me

Master's student at PUC-Rio focused on Artificial Intelligence and Machine Learning. My research explores diffusion-based generative models for medical image segmentation in collaboration with INCA (Brazil's National Cancer Institute).

I have nearly six years of experience applying data science and deep learning to real-world problems in the financial sector, including credit risk modeling, causal inference, and automated analysis pipelines.

Recently, I've been expanding my research interests toward human-centered generative AI, exploring how these models can enhance creative and expressive applications.

Education

Ago, 2024 - Ago, 2026 | **MSc in Computer Science,** *PUC-Rio*

Field of study: AI/ML.

- Research on diffusion models for medical image segmentation.
- Collaboration with INCA (National Institute of Cancer), integrating computational research and clinical applications.

2017 - 2023 **| BSc in Computer Science,** *CEFET-RJ*

- Final paper: Causal study on credit policy changes during the COVID-19 pandemic using TMLE.
- Supported master's projects using Deep Learning and NLP for hierarchical text classification (TCE-RJ project).

Professional Experience

Ago, 2025 - Now | **Research Fellow**, *Tecgraf / PUC-Rio*

- Developing AI-based tools for medical image analysis in dysphagia assessment using Videofluoroscopic Swallow Studies (VFSS).
- Building annotation and segmentation pipelines for cervical vertebrae and swallowing structures.
- Applying deep learning and diffusion models to improve segmentation accuracy
- Coordinating technical workflows for reproducibility and scalability within the research group.

2021 - Ago, 2025 | **Data Scientist**, *CashU*

- Led causal impact analyses (Double ML) to measure product effectiveness and client retention.
- Built a prospect analysis pipeline, reducing processing time from one day to minutes.
- Conducted TMLE-based studies on credit policy impacts during COVID-19.
- Developed credit recommendation and risk models enabling recurring monthly allocation of tens of millions of BRL in credit.

2019 - 2021 | **Data Scientist Intern,** *BNDES*

- Developed a Python web scraper and NLP pipeline to analyze public perception of the institution.
- Collaborated on predictive models for highway traffic and fraud detection in corporate transactions.
- Built automated data ingestion and preprocessing pipelines

Awards

2025 | **Nemesis -** AI for Public Expenditure Transparency (TCE-RJ)

- Winner of 1st Place INOVA Telebrasil Award
- Helped automate fraud detection and improve transparency in public oversight.

Languages

English: Advanced Intermediate (C1)

Portuguese: Native Language

Skills

Programming Language: Python, C++, C

Frameworks: PyTorch, Scikit-Learn, OpenCV, PIL