

VITOR DE OLIVEIRA MAFRA

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Belo Horizonte, Minas Gerais - Brazil

EDUCATION

Universidade Federal de Minas Gerais

2024 - Present

Master of Science in Computer Science; Advisor: Fabrício Benevenuto, Ph.D.

Department of Computer Science

Universidade Federal de Minas Gerais

2018 - 2023

Bachelor of Science in Information Systems

Department of Computer Science

Final Paper: Rumble at first glance: a quantitative look at rumble.com, the “free speech” online video platform

SKILLS

Computer Languages

Python, C++, C, SQL, HTML, L^AT_EX, Go

Tools

Git, Linux, Jupyter, Pandas, Numpy, Matplotlib, Seaborn, TensorFlow, Pytorch, Scrapy, Scikit-Learn, NLTK, SciPy, AWS (Lambda and EC2)

Natural Languages

Portuguese (native), English (advanced), Mandarin (basic)

EXPERIENCE

Quaest

October 2023 - Present

Data Scientist

- Developed a statistical sampling validation tool that utilized Voronoi diagram analysis and historical bipartisan election data from the Lula vs. Bolsonaro political landscape, ensuring precise geographical representation and contributing to Quaest’s emergence as the most accurate pollster in the 2024 Brazilian elections.
- Created a machine learning-powered social media intelligence product that proactively detected fraudulent scams using Itaú’s brand name across WhatsApp, Telegram, and Discord, reducing brand impersonation and protecting Brazil’s biggest bank from potential reputational and financial damages for their clients.

Eleições Sem Fake, DCC - UFMG

January 2021 - Present

Undergraduate Research Assistant (Advisor: Fabrício Benevenuto, Ph.D.)

- Created an automatic report generator using Python, Pandas, Matplotlib and L^AT_EX to assist journalists, researchers, and NGOs understand the stories behind the data we gather on WhatsApp and Telegram. This tool helped reporters to write over than 30 journal articles published in big press names such as The Guardian, Folha de S. Paulo, O Globo, Estadão, Veja, The Intercept, UOL, Valor Econômico and BBC News.
- Engineered a robust data collection system leveraging Python and Pandas, employing a hacked smartphone to capture, anonymize and store hundreds of thousands of messages, images, audio, and video content from public WhatsApp groups on a daily basis.
- Collaborated directly with Brazil’s Superior Electoral Court (TSE) to develop strategic approaches for mitigating misinformation during the 2022 Brazilian electoral process.
- Implemented a video classification algorithm using computer vision techniques and perceptual hashing to differentiate between TikTok and Kwai video content within research datasets.
- Published three research articles, earning 35 citations, and achieving an h-index of 3.

COVID Data Analytics, UFMG

June 2020 - December 2020

Undergraduate Research Assistant (Advisor: Wagner Meira, Ph.D.)

- Developed an Instagram crawler using Python and Scrapy, to scrape, on a large scale, COVID-related data
- Managed a COVID-19 data scraping on YouTube videos in Brazilian channels.

PROJECTS

Bot do Bandejão

September 2019 - Present

Using Python, Selenium, BeautifulSoup and AWS, made a bot that scrapes my college's restaurants menus and publishes them on Twitter so that more than 6000 students could evaluate and decide where to eat. Its popularity and open-source code bootstrapped an ecosystem of similar projects around Brazil. These bots work in prominent universities such as USP, UFRJ, UFOP, and ITA, helping more than 40000 students daily.

SIC

February 2017 - December 2017

Developed a Model United Nations event at my school, fostering communication, leadership, and global issue awareness through geopolitical discussions. The event became an annual tradition and continues to thrive.

PUBLICATIONS

Analyzing YouTube Videos Shared on WhatsApp and Telegram Political Public Groups

WebMedia '22: Proceedings of the Brazilian Symposium on Multimedia and the Web

Telegram Monitor: Monitoring Brazilian Political Groups and Channels on Telegram

HT'22: 33rd ACM Conference on Hypertext and Social Media

Monitor de WhatsApp: Um Sistema para Checagem de Fatos no Combate à Desinformação

XXVII Simpósio Brasileiro de Sistemas Multimídia e Web

EXTRA-CURRICULAR

Fênix - Estudos Astronáuticos UFMG (Rocketry Team)

October 2019 - December 2020

Simulation team member

- Built a Python model to emulate wind in the simulations and improved team's software engineering using Git.

Programação 101 (Coding 101)

July 2018 - July 2019

Volunteer Tutor

- Helped first-year students by teaching computer programming in C before classes started.

Colegium Geopolitics Studies (Geopolitics Study Group)

October 2016 - December 2017

Co-founder and team member

- Weekly meetings with the purpose of studying and discussing international Politics.

YEX - Youth Experience

January 2016 - December 2022

IT team member and Volunteer Counselor

- Developed Business Intelligence in the organization and used data to improve inner processes.
- Worked as a volunteer counselor developing leadership, English, and communication skills with young people.

YMCA of the USA

July 2015

Volunteer Camp Counselor

- Lived in Hartwell, GA with an American family and worked as a volunteer camp counselor during summer.

ACADEMIC ACHIEVEMENTS

Gold medal in XVII OBA and Silver medals in XVIII and XX OBA (Brazilian Astronomy and Astronautics Olympiad)

2014, 2015, 2017

Sociedade Astronômica Brasileira (Brazilian Astronomical Society), Agência Espacial Brasileira (Brazilian Space Agency), UFRJ (Federal University of Rio de Janeiro)

Finalist in Jornal na Escola (Essay contest organized by the largest newspaper in my state) 2015

Jornal Estado de Minas