Igor Lima Rocha Azevedo

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EDUCATION

1) ***Imperial College London*** — London, United Kingdom
Artificial Intelligence and Machine Learning Master of Research (MRes) — *September 2025 - September 2026*

- To be started.

2) ***University of Brasilia*** — Brasilia, Brazil
Bachelor of Electrical Engineering — *August 2016 - May 2022*

- Focused on embedded systems, publishing a paper on FPGAs, and later transitioned to Machine Learning for codec optimization and financial markets. Final thesis supervised by Professor *Edson Mintsu Hung*.

3) ***University Center of Brasília (CEUB)*** — Brasilia, Brazil
System Analysis and Development Associate Degree of Applied Science — *January 2017 - December 2018*

- Concentrated on Java development, particularly in real-time tracking systems, with a final thesis on a pharmacy delivery application, under the guidance of Professor *Auto Tavares*.

RESEARCH EXPERIENCES

1) **Research Scholar** at *The University of Tokyo* — Tokyo, Japan | *April 2023 – April 2025*

- Researched recommender systems for news, addressing popularity bias and news avoidance. Published at SIAM International Conference on Data Mining (**SDM'25**), under the guidance of Professor *Toyotaro Suzumura*.
- Collaborated closely with *Nikkei Inc.* on the design and implementation of novel recommender system models under the guidance of Dr *Yuichiro Yasui*;
- Developed deep learning models for high-frequency stock price forecasting, with a focus on predicting market behavior during election periods;
- Conducted research on foundational models of large language models (LLMs), exploring the use of retrieval-augmented generation (RAG) and long-context handling.

2) **Research Intern** at *Cellcrypt / CSG* — Arkansas, United States (Remote) | *September 2020 – June 2021*

- Optimized machine learning models to improve VoIP performance, enhancing call quality and reducing latency;
- Built a machine learning pipeline for automated *PJSIP* parameter tuning, boosting call quality metrics by 7%.

PROFESSIONAL EXPERIENCES

1) **Technology Coordinator** at *VOGA* — Brasília, Brazil | *February 2022 – April 2023*

- Led system integration and scalability efforts following VOGA's acquisition by *BTG Pactual*, South America's largest investment bank. Developed a centralized investment monitoring and stock tracking system, integrating internal platforms with BTG's API, and managing over USD 300 million in assets;
- *Tech Stack*: FastAPI, Nx, Flask, NestJS, AWS services (EC2, DynamoDB, RDS, Lambda, S3), and Cloudflare.

2) **Development Team Lead** at *VOGA* — Brasília, Brazil | *July 2021 – January 2022*

- Led a team to build a web platform for stock market monitoring and equity crowdfunding, launching *BridgeHub*, a spin-off company within VOGA;
- *Tech Stack*: FastAPI, Nx, NextJS, NestJS, TailwindCSS, and AWS services (ECS, Lambda, RDS).

RESEARCH PAPERS

1) ***A Look Into News Avoidance Through AWRS: An Avoidance-Aware Recommender System***
January - July 2024 | *Paper* (**SIAM International Conference on Data Mining - SDM'25**)

- Collaboration: *Toyotaro Suzumura* (The University of Tokyo) and *Yuichiro Yasui* (Nikkei Inc.)
- Highlights: Developed AWRS, an Avoidance-Aware Recommender System for news that incorporates article avoidance as a key factor to improve recommendations. Evaluated on datasets in English, Norwegian, and Japanese, AWRS outperformed existing methods by leveraging avoidance as an indicator of user preferences.

2) ***POPK: Mitigating Popularity Bias via a Temporal-Counterfactual***
April - July 2024 | *Paper*

- Collaboration: *Toyotaro Suzumura* (The University of Tokyo) and *Yuichiro Yasui* (Nikkei Inc.)
- Highlights: Developed POPK, a model which uses temporal-counterfactual analysis to reduce popularity bias in news recommendations. POPK improves accuracy and diversity by systematically removing the influence of popular articles.

3) ***A SHA-3 Co-Processor for IoT Applications***
January - November 2020 | *Paper* (**IEEE - WCNPS'20**)

- Collaboration: *Alexandre S. Nery* (University of Brasilia) and *Alexandre da C. Sena* (Rio de Janeiro State University)
- Highlights: Designed and implemented a SHA-3 hardware co-processor on FPGA for IoT applications, achieving 65% faster performance than ARM Cortex-A9 with improved energy efficiency and reduced circuit area.

AWARDS

1) **Japanese Government (MEXT) Research Scholarship**
April 2023 - April 2025 | *certificate*
About: The Japanese Government (MEXT) Research Scholarship supports international students conducting research at Japanese higher education institutions.

2) **Brazilian Government (CNPq) Institutional Scientific Initiation Scholarship (PIBIC)**
August 2019 - July 2020 | *certificate*
About: The PIBIC program, funded by the Federal Government of Brazil, aims to support undergraduate students in engaging with research, technological development, and innovation.

OPEN SOURCE CONTRIBUTIONS

1) **Newsreclib** *code*

- Implemented the PP-REC SOTA model into the news recommendation framework.

2) **Qlib** *code*

- Added support for the Brazilian stock market, enabling local investors and researchers to use Qlib's machine learning models and data processing pipelines on Brazilian stock data.

PROJECTS

1) **N2S - Knowledge Made Accessible** *Website*

- Open-source platform focused on knowledge dissemination, simplifying deep learning, algorithms, and information theory with clear, visual explanations.

2) **Life Before The End** *Website*

- An open-source platform designed to promote Indigenous awareness and scientific work to support Indigenous communities.

CERTIFICATIONS

- **IELTS**: Overall Band Score: 8.5 (Listening: 8.0, Reading: 8.5, Writing: 7.0, Speaking: 8.5)
- *Deep Learning* from Carnegie Mellon University • *Digital Signal Processing* from EPFL
- *Information Theory* from The Chinese University of Hong Kong • *Algorithms and Data Structures* from UCSD
- *Model United Nations* at Harvard University • *Model United Nations* at Yale University

LEADERSHIP EXPERIENCES

Commercial Director, Electrical Engineering Junior Enterprise (*ENETEC*) *June 2019 - April 2020*

- Led the team to achieve annual goals set by the *National Association of Junior Enterprises in Brazil*, securing projects worth approximately USD 30,000, which funded training and development for company members.

LANGUAGES & SKILLS

Languages: Native ***Portuguese***, fluent ***English***, limited ***Spanish***, basic ***Japanese***
Skills: Python, PyTorch, CrewAI, Java, C, Flask, VPC, Nginx, SQL, AWS Services, Cloudflare