

# Igor Lima Rocha Azevedo

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## EDUCATION

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

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- 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.](#) (A Financial Times group company) 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%.
- 3) **Undergraduate Research Fellow** at [University of Brasilia](#) Brasília, Brazil | *August 2019 – July 2020*
  - Awarded a competitive, one-year fellowship by the Brazilian federal government to conduct research on cryptographic hardware for IoT applications.
  - Designed and implemented a SHA-3 hardware co-processor on FPGA, achieving 65% faster performance than an ARM Cortex-A9 with improved energy efficiency and reduced circuit area.

## PROFESSIONAL EXPERIENCES

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- 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;
- 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;

## RESEARCH PAPERS

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- 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) *NewsReX: A More Efficient Approach to News Recommendation with Keras 3 and JAX*

January - August 2025 | [Paper](#)

- Collaboration: [Toyotaro Suzumura](#) (The University of Tokyo) and [Yuichiro Yasui](#) (Nikkei Inc.)
- Highlights: A modular and extensible framework for news recommendation systems research, implementing state-of-the-art models with a focus on reproducibility and ease of use. The framework has been optimized with **Keras 3 + JAX** backend for enhanced performance through JIT compilation and XLA acceleration.

## 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

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### 1) SIAM Travel Award – SDM25

May 2025 | [certificate](#)

About: Granted by the Society for Industrial and Applied Mathematics (SIAM), this award supported travel to the 2025 SIAM International Conference on Data Mining (SDM25) held in Alexandria, VA. It recognized promising early-career researchers contributing to the field.

### 2) 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.

### 3) 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

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### 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.

### 3) VISUADL - Bringing Deep Learning Concepts to Life

[Website](#)

- Platform dedicated to making deep learning concepts easier to understand through visual animations and simpler explanations.

## CERTIFICATIONS

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- **IELTS:** Overall Band Score: 8.0 (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

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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

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**Languages:** Native *Portuguese*, fluent *English*, limited *Spanish*, basic *Japanese*

**Skills:** Python, PyTorch, Lightning AI, Keras, JAX, CrewAI, Flask, FastAPI, Java, C, VPC, Nginx, SQL, AWS, Cloudflare