

IGOR L. R. AZEVEDO

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EDUCATION

Imperial College London

London, United Kingdom

Master of Research in Artificial Intelligence and Machine Learning

Sept 2025 – Sept 2026

- Thesis “A Minority of One: Binary Imbalance beyond Long-Tail Learning”.
- Researched multimodal representation collapse in contrastive learning and mixture-of-experts models under data scarcity and extreme class imbalance.
- Investigated expert collapse in mixture-of-experts routing when minority classes are scarce.

Supervisor: Prof. Pedro Mediano

University of Brasília

Brasília, Brazil

BSc in Electrical Engineering, GPA 4.35/5.0

Aug 2016 – June 2022

- Undergraduate research on FPGA acceleration of SHA-3 cryptography for IoT, funded by PIBIC/CNPq.
- Thesis applying machine learning to stock market prediction with gradient boosting and neural networks.

Supervisors: Prof. Alexandre S. Nery (FPGA research), Prof. Edson Mintsu Hung (thesis)

RESEARCH EXPERIENCE

The University of Tokyo

Tokyo, Japan

Research Assistant

Apr 2023 – Apr 2025

Nikkei (*Financial Times*) collaboration – news recommendation Aug 2023 – Apr 2025

- Built data pipelines and feature engineering over Nikkei user interaction logs to train news recommenders.
- Modelled user behaviour and implicit negative feedback (news avoidance) with candidate-aware attention to mitigate popularity bias – accepted at **SIAM SDM 2025**.
- Built NewsReX, a reproducible PyTorch/JAX recommendation framework, up to 2.8x faster – accepted at **CIKM 2026**.
- Built multi-agent LLM pipelines (Strands Agents) with agentic retrieval, local open-weight LLMs and retrieval-augmented generation to extract user behaviour patterns, evaluated with LLM-as-judge.

Toyota collaboration – mobility and point-of-interest recommendation Apr 2023 – Aug 2023

- Processed GPS vehicle telemetry into trajectories and user-place graphs for next-destination prediction.
- Implemented graph neural networks and the lab’s published methods in PyTorch to model driver mobility.
- Designed the benchmark against a range of baselines on Toyota’s proprietary data and presented the findings.

Supervisors: Prof. Toyotaro Suzumura, Dr. Yuichiro Yasui

PROFESSIONAL EXPERIENCE

VOGA, acquired by BTG Pactual

Brasília, Brazil

Development Team Lead

July 2021 – Apr 2023

- Architected a real-time portfolio data platform (Flask, Next.js, PostgreSQL) monitoring USD 300M+ in assets.
- Built cloud infrastructure as code on AWS (ECS, RDS, EC2) with Terraform, Docker and Jenkins CI/CD.
- Automated reporting workflows into ETL pipelines and self-service dashboards.
- Led 7 engineers through the post-acquisition integration into **BTG Pactual**, Latin America’s largest investment bank.

Cellcrypt, secure communications

London (Remote)

Applied Machine Learning Intern

Sept 2020 – July 2021

- Built an ML training and inference pipeline on AWS EC2 that tunes VoIP codecs, improving call quality by 7%.
- Analysed packet captures (Wireshark) and call logs to diagnose quality loss in encrypted calls.
- Built a C++ VoIP testbed (PJSIP, Opus, G.711) for codec experimentation.

Supervisor: Prof. Edson Mintsu Hung

LEADERSHIP

VOGA, acquired by BTG Pactual

Brasília, Brazil

Development Team Lead

2022 – 2023

- Managed and mentored a team of 7 engineers across frontend, data and operations.

ENETEC, junior enterprise (student-run consultancy) at the University of Brasília

Brasília, Brazil

Business Development Lead

June 2019 – Apr 2020

- Closed about USD 15,000 in consulting contracts with companies and community clients.
- Contributed to ENETEC winning the High Growth, Connected and Impact Junior Company awards in 2019.

SELECTED PUBLICATIONS

NewsReX: An Open-Source Multi-Framework for Neural News Recommendation

Igor L. R. Azevedo, Toyotaro Suzumura, Yuichiro Yasui

[View](#)

- **CIKM 2026.** PyTorch/JAX framework that trains news recommenders 2.8x faster and reproduces published models.

AWRS: An Avoidance-Aware Recommender System

Igor L. R. Azevedo, Toyotaro Suzumura, Yuichiro Yasui

[View](#)

- **SIAM SDM 2025.** Candidate-aware attention that models news avoidance as implicit negative feedback.

A SHA-3 Co-Processor for IoT Applications

Igor L. R. Azevedo, Alexandre S. Nery, A. C. Sena

[View](#)

- **IEEE WCNPS 2020.** FPGA hardware accelerator for SHA-3 cryptography on IoT devices.

PROJECTS

[learning-ai.cafe](#), creator

2026 – Present

- Collaborative open-source AI textbook, one tutorial per topic from first intuition to deep understanding.

HONOURS

Japanese Government (MEXT) Research Scholarship

2023 – 2025

- Full funding for research at The University of Tokyo, around 9% global acceptance.

PIBIC/CNPq Research Scholarship, Brazilian Government

2019 – 2020

- Awarded to the top 4% of undergraduates nationwide, to research hardware acceleration for cryptography.

AWARDS

SIAM Travel Award, SIAM SDM 2025

2025

- Awarded by SIAM to early-career researchers with a promising future in the field.

Invited Report, Database Society of Japan

2025

- Invited by Japan's national database research society to write the SIAM SDM 2025 report for its [newsletter](#).

Y Combinator Startup School, Travel Grant

2026

- Selected as a high-potential builder for talks by Sam Altman and Jensen Huang, travel funded by YC.

COMPETITIONS

3rd Place, HackTheLaw, University of Cambridge and Stanford CodeX

2026

- Built a smart lawsuit tracker, judged by Anthropic, Perplexity, Clifford Chance and White & Case.

TECHNICAL SKILLS

- Programming: Python, SQL, C++, C, Java
- Machine learning: PyTorch, JAX, PyTorch Geometric, scikit-learn
- LLM systems: multi-agent pipelines (Strands Agents), agentic retrieval, RAG, LLM-as-judge evaluation
- Infrastructure: AWS, Docker, Terraform, Jenkins, PostgreSQL, high performance computing
- Languages: Portuguese (native), English (fluent), Spanish (intermediate), Japanese (basic)