

LUIS CARLOS MARTINS ARRUDA JUNIOR

Software Engineer ~ Backend / ML

📍 Goiânia, Brazil

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SUMMARY

Software Engineer with experience in backend development and applied machine learning. Worked on large-scale health-care systems using Java and Spring Boot, delivering critical features under strict business and regulatory requirements. Strong background in data processing, machine learning pipelines, self-supervised learning, and computer vision through graduate-level projects. Comfortable working end-to-end, from data analysis to production-ready backend services.

SKILLS

Programming: Java, Python, SQL

Backend: Spring Boot, REST APIs, Microservices, Hibernate

Data & ML: scikit-learn, PyTorch, Pandas, NumPy, SHAP, Machine Learning Pipelines

Databases: MySQL, PostgreSQL, DB2

DevOps & Tools: Git, Jenkins, SonarQube, Bitbucket, CI/CD

Other: Data Cleaning, Imbalance Handling, Model Evaluation, Fairness, Explainability

EXPERIENCE

Feb 2026 – Jun 2026 **Professional Education Instructor III**

SENAI Goiás

- Contributed to the SENAI Software Factory and the Applied Artificial Intelligence Center (NIAA), developing technology solutions based on project and institutional demands.
- Worked on applied AI projects involving recommendation systems, computer vision, and natural language processing (NLP).
- Helped design and build the AI cluster, as well as staging and development environments for the Software Factory.
- Provided technical and pedagogical support to faculty, offering specialized assistance with computer and information technologies.
- Substituted instructors during absences, ensuring continuity of academic activities and maintaining teaching quality.

Artificial Intelligence / Recommendation Systems / Computer Vision / NLP

Sep 2021 – Jul 2023 **Software Engineer**

Capgemini Brazil

- Developed and maintained backend services for Bradesco Saúde healthcare systems using Java and Spring Boot.
- Implemented regulatory requirements (TISS 4.0/4.1), including Social Name support across APIs, reports, and SQL queries.
- Designed and implemented microservices for automated guide cancellation workflows.
- Identified production issues, collaborated with support teams, and improved system reliability.
- Consistently delivered sprint goals and received client recognition, leading to promotion.

Java / Spring Boot / Microservices / SQL

Sep 2020 – Apr 2021 **Backend Developer Intern**

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- Fixed bugs and implemented features in corporate web systems using Java and JSP.
- Migrated static HTML pages to dynamic JSP integrated with backend services.
- Resolved CMS-related issues involving media upload and rendering.

Java / JSP

Feb 2019 – Sep 2020 **IT Support Intern (L1)**

Ministério Público do Estado de Goiás

- Provided remote Level 1 IT support for internal systems, software, printers, and digital certificates.
- Installed and configured applications, reducing escalations to higher support levels.

SELECTED PROJECTS

2024	Machine Learning for Healthcare Data End-to-end machine learning project using Brazilian public healthcare data (DATASUS, 2.4M+ records). Designed data validation, cleaning, imbalance handling, and model evaluation pipelines. Compared multiple models and applied fairness-aware techniques and explainability (SHAP) to support responsible decision-making.	Graduate Project
2024	Self-Supervised Learning for Time Series (HAR) Implemented self-supervised learning pipelines in PyTorch for human activity recognition. Applied Contrastive Predictive Coding (CPC) and Mixing Contrastive Learning (MCL), adapting architectures, projection heads, and loss functions to limited and incompatible datasets. Conducted critical comparison against supervised baselines, analyzing overfitting and generalization.	Graduate Project
2025	Approved Automation Script (Relic Scanner) Designed and implemented a client-side automation script that scans and parses structured reports directly from a web interface, automatically detecting and classifying domain-specific entities. The script was formally reviewed and approved by platform administrators and incorporated into the official public script library of Tribal Wars (InnoGames), being distributed to and used by end users. Features include automated data extraction, classification by quality tiers, color-coded visualization, and an interactive popup UI. JavaScript / DOM Parsing / Automation / UI Scripting	Independent Project
2024	Computer Vision & Image Processing Implemented multiple image processing pipelines in Python using OpenCV and NumPy, including steganography (LSB), frequency-domain filtering (FFT), document skew correction (Hough Transform), and image registration using SIFT, BRIEF, and ORB.	Graduate Projects

EDUCATION

Ongoing	M.Sc. in Computer Science Focus on Machine Learning, Data Analysis, and Artificial Intelligence GPA: 3.45/4.0	University of Campinas (UNICAMP)
2017 – 2022	B.Sc. in Computer Science	PUC Goiás

UNDERGRADUATE RESEARCH

2020 – 2021	PIBIC/CNPq Research Fellow Competitive undergraduate research scholarship funded by the Brazilian National Council for Scientific and Technological Development (CNPq) under the Institutional Program for Undergraduate Research (PIBIC). Developed LSTM-based recurrent neural network models for prediction and simulation of financial time series in the Brazilian stock market. The project resulted in a poster presentation at the 53rd Brazilian Symposium on Operations Research (SBPO).	PUC Goiás
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PUBLICATIONS & POSTERS

2021	Prediction and Simulation of Brazilian Financial Asset Prices Using LSTM Recurrent Neural Networks 53rd Simpósio Brasileiro de Pesquisa Operacional (SBPO) Undergraduate research project presented as a poster at the 53rd SBPO, organized by the Brazilian Society of Operations Research (SOBRAPO), focusing on LSTM-based modeling and simulation of financial time series.
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LANGUAGES

Portuguese — Native English — B1