Lucas Emerick Rodrigues

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Backend & Data Engineer with over a decade of professional experience designing, building and maintaining scalable, high-performance systems. My work spans real-time data pipelines that process large volumes of events daily to power analytics dashboards and streaming tools for both end users and internal teams. I develop APIs and microservices in Python, C++ and Go, and deploy them on cloud platforms using Infrastructure as Code and container orchestration. Passionate about system observability, performance tuning and resilience engineering, I deliver clean, maintainable solutions across web applications, distributed systems, data workflows and embedded projects.

EMPLOYMENT HISTORY

Data Engineer, Conatus (Nov 2018 — Present) (Part-time Contractor)

- Developed systems to collect, process, and visualize real-time data from sources like Twitter, Facebook, Instagram, news feeds, and public datasets, supporting presidential, state, and municipal campaigns.
- Built web applications that helped campaign teams monitor and optimize marketing strategies, accelerating decision-making and improving responsiveness during fast-paced political events.
- Automated reporting and analysis workflows, reducing manual effort by over 15 hours per week and increasing the frequency and clarity of insights.
- Enabled data-driven strategies by delivering live dashboards and alerts that enhanced agility in high-stakes campaign environments.

Back-End Software Engineer, Voxy (Jan 2022 — Dec 2024)

- Developed streaming services delivering audio/video lessons to tens of thousands of monthly users.
- Designed data pipelines handling over 1 million language exercise records per month.
- Integrated large language models for personalized curriculum suggestions, boosting student engagement and cutting manual content curation time by about 30%.
- Implemented Infrastructure as Code (Terraform) and CI/CD workflows, eliminating manual provisioning steps and reducing build failures.

Full-Stack Developer, FELUMA (Oct 2020 — Jan 2022)

- Led the design and maintenance of a remote-testing platform used by dozens of institutions and hundreds of students per exam, ensuring >99% uptime during assessment windows.
- Developed interactive dashboards and performance-analytics interfaces that gave instructors on-demand insights, cutting report-generation time by over 50%.
- Automated grading and result-aggregation workflows, eliminating manual data handling and improving accuracy of assessment outcomes.

Data Engineer, Urissanê Comunicação (Nov 2018 — Oct 2020)

- Built and maintained large-scale data infrastructure to support presidential, state, and municipal campaigns, focusing on public datasets and social media APIs.
- Developed ETL pipelines integrating data from government portals, social platforms, and media outlets, ensuring consistent and reliable ingestion for analytics.
- Implemented Elasticsearch-based indexing and search systems that enabled fast querying across millions of records, supporting strategic communications and rapid-response operations.
- Collaborated with analysts and campaign staff to translate data needs into scalable backend solutions, improving visibility and access to critical information during key electoral periods.

Data Engineer Researcher - FAPEMIG (Jul 2017 — Jul 2018)

- Designed and implemented the "Technoscience Barometer," a system that used machine learning to classify and analyze science-related content from Ibero-American media sources.
- Trained a neural network to detect patterns in journalistic coverage of science and technology, improving the consistency and precision of content categorization.
- Contributed to more effective science communication by providing structured insights into how scientific topics were represented in the media.
- Collaborated with researchers and public institutions to translate data findings into actionable outreach strategies.

Industrial Automation Technician, Tecwise (May 2011 — Jan 2013)

- Programmed and installed over 20 embedded automation and telecommunication systems for clients such as Vale, Petrobras, and Braskem.
- Configured PLCs and Cisco/Elpro RF equipment to streamline signal transmission.
- Developed control routines in C/C++, Python, and Ladder logic that automated instrumentation and calibration workflows.
- Coordinated on-site deployments with cross-functional teams.

EDUCATION

Postgraduate Certificate in Autonomous Systems Engineering
Pontifícia Universidade Católica de Minas Gerais (PUC Minas), Mar 2025 – Apr 2026

Technical Degree in Industrial Automation
Colégio Padre de Man, Jan 2009 – Jan 2011

Bachelor's Degree in Anthropology
Federal University of Minas Gerais (UFMG), Jan 2015 – Jan 2021

TECHNICAL SKILLS

Programming Languages
Python (advanced), Go (proficient), C++ (proficient), JavaScript (advanced), Bash (proficient)

Back-End Development & APIs
FastAPI, Django, Flask, Gin, REST APIs, Web development, CI/CD, Automated testing, Data modeling, HTTP, WebSockets

Data & Visualization
SQL (advanced), Elasticsearch (advanced), Power BI, Data visualization, Large Language Models (LLMs), Fine-tuning, Apache Airflow

Infrastructure & Cloud
Docker, AWS (S3, EC2, Lambda, SNS, SQS, Fargate, etc.), Kubernetes, Data orchestration, Cloud computing

Monitoring & Observability
Grafana, Kibana, Logging, Metrics, Alerting

Environment & Version Control
Linux, Git

LANGUAGES

Portuguese (Native) , Eglish (Advanced)