

EMMANUEL OLIVEIRA

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PROFESSIONAL SUMMARY

Software engineer and architect experienced in technical leadership, systems architecture, AI, machine learning, backend, cloud, and LLMs.

EDUCATION

São Paulo State University (UNESP) <i>Master's degree in Artificial Intelligence</i>	São José do Rio Preto, SP <i>In progress</i>
Faculty of Technological Education of the State of Rio de Janeiro (FAETERJ) <i>Bachelor's in Information and Communication Technology</i>	Petrópolis, RJ <i>2020 – 2024</i>
Professional Education Center in Information Technology (CPTI) <i>Technical course in Computer Science</i>	Petrópolis, RJ <i>2015 – 2018</i>

PROFESSIONAL EXPERIENCE

Software Engineer <i>WeFit Digital Service Design</i> Developed backend APIs, cloud services, infrastructure, clusters, DevOps practices, and AI solutions, including projects for the banking sector.	Nov. 2024 – Present <i>São Paulo, SP</i>
Technical Lead and Software Engineer <i>MentorApp Inovação e Tecnologias</i> Responsible for architecting, designing, and implementing software, cloud, AI, and mobile solutions, while leading the technical team.	Jan. 2022 – Nov. 2024 <i>Petrópolis, RJ</i>
AI and Development Intern <i>MentorApp Inovação e Tecnologias</i> Responsible for the development and maintenance of software applications and machine learning models.	Jan. 2020 – Jan. 2022 <i>Petrópolis, RJ</i>
IT Support Intern <i>City Council of Petrópolis</i> Responsible for providing technical support to the City Council's staff, assisting with server configurations, preparing budgets for purchases and maintaining computers.	Mar. 2018 – Dec. 2019 <i>Petrópolis, RJ</i>

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Rust

Backend: NestJS, FastAPI, Flask

Databases: MongoDB, Neo4j, DynamoDB, Redis, NoSQL, graph databases

Cloud: AWS, Google Cloud

Tools: WhatsApp API, LangChain, Selenium, Kubernetes, GitHub Actions, Hugging Face, Scikit-Learn, OpenAI, Amazon Bedrock

Technologies: RAG, LLMs, Machine Learning, Generative AI, HTTP Streaming, DevOps, Linux

Soft Skills: Communication, Leadership, Creativity, Collaboration, Problem Solving, Teamwork, Adaptability

XPrints AI Code Assistant | *Python, FastMCP, Neo4j, Embeddings, AWS Bedrock, GitHub Actions* 2026 – Present

- RAG-based AI assistant for exploring and understanding poorly documented, legacy, or restricted-access codebases. Synchronized directly with GitHub repositories through GitHub Actions, it updated its knowledge base whenever relevant code changes occurred and structured the repository as graphs in Neo4j derived from the AST. Combined embedding-based semantic search, BM25, graph traversal, and grep-style text search to locate implementations, dependencies, and potential root causes of issues. The system was available through a web application and MCP for developers, with authentication and authorization controls.

XPrints Planner | *Node.js, React, Kubernetes, WebSocket, GitHub, GitHub Actions, Claude Code, Keycloak, AWS S3, Module Federation* 2025 – 2026

- Low-code and vibe-coding platform for frontend prototyping, enabling designers and less technical users to build functional applications beyond traditional design tools such as Figma, accelerating idea validation and value delivery to clients. Each Planner automatically provisioned a GitHub repository from a template containing company development skills, standards, and guidelines. During browser-based editing, an isolated session ran in a Kubernetes pod with Claude Code, providing chat and real-time build visualization through WebSocket. Technical users could also clone the same repository and continue development in their preferred local editor. Commits to the main branch triggered a GitHub Actions pipeline that published the Planner to AWS S3. Planners were loaded through Module Federation without direct coupling to the host, while the platform centralized authentication and authorization with Keycloak and restricted each application to explicitly authorized users and clients.

Voice of the Customer | *Python, LangChain, GCP, Gemini, Gemini Embeddings, Vertex AI* 2024 – 2025

- Knowledge management platform for centralizing Discovery documentation, project information, and business rules in an AI-searchable knowledge base. Built with Python, LangChain, Gemini, Gemini Embeddings, and Vertex AI, it enabled continuous evolution of knowledge throughout the entire project lifecycle, from onboarding to execution, preserving context, decisions, and relevant information in an accessible way for everyone involved.

MentorGPT | *Python, Flask, AWS, AWS Cognito, AWS Lambda, AWS S3, AWS EKS, AWS SQS, AWS SES, AWS ECR, OpenAI, Groq, Gemini, React + Vite, Slack* 2023 – 2024

- Built an LLM-based customer service platform for configurable AI agents, combining hybrid RAG with embeddings and Neo4j knowledge graphs. Supported multi-format knowledge ingestion, Gemini, GPT, and Groq model selection, Slack integration, iframe embedding, 2FA, and granular access control.

Smart Communities | *Python, Flask, Rust, Tokio, MongoDB, AWS S3, AWS SQS, AWS Lambda, WhatsApp API, Telegram API, LLMs* Dec. 2022 – Dec. 2023

- Delivered a WhatsApp learning platform with multimedia paths, gamification, spaced repetition, and LLM-powered support for 500+ active users in Rocinha. Built Rust link shortening to avoid local downloads and integrated Python, Flask, MongoDB, AWS, WhatsApp, and Telegram; the project received a WITSA international award in 2023.

ZapVagas | *Python, Flask, React + Vite, MongoDB, AWS App Runner, WhatsApp API* Oct. 2023 – Dec. 2023

- Built a WhatsApp job-distribution platform for local roles outside traditional recruiting services, reaching 1,000+ registered candidates. Employers published openings through a React and Vite portal, while candidates received structured, opt-out-enabled messages; the Python, Flask, and MongoDB application ran on AWS App Runner.

RFID/NFC Access Control | *Arduino, RFID/NFC, Python, API* Mar. 2023 – Apr. 2023

- Developed an academic access-control system using Arduino, RFID/NFC readers, and a Python API to authenticate credentials. Enforced location-based permissions and logged 500+ daily entries and exits for classrooms, laboratories, libraries, and administrative areas.

stAIr | *Python, Flask, Neo4j, AWS EKS, AWS S3, AWS Lambda* Nov. 2021 – Aug. 2022

- Built a digital-transformation learning platform for Brasil Mais with streaming-style courses and AI-assisted questions, training 200+ micro and small businesses. Implemented Python, Flask, Neo4j, Amazon EKS, S3, and Lambda; selected as 1 of 9 projects nationwide.

MentorApp Academy | *Python, Flask, Recommendation systems, scikit-learn, Selenium, MongoDB, AWS EC2, AWS Lambda* Jun. 2020 – Dec. 2021

- Created a soft-skills learning platform with automated collection of 10,000+ pieces of content, ML classification, and personalized recommendations using FunkSVD collaborative filtering. Built with Python, Flask, scikit-learn, Selenium, MongoDB, Amazon EC2, and Lambda, with rating and moderation workflows for content quality.

MentorApp Alexa - Business Games | *Python, Amazon Alexa, Alexa Skills Kit, AWS Lambda, AWS S3, Neo4j* Jan. 2021 – Mar. 2021

- Developed an Alexa skill for 300+ users with branching business narratives, decision-based feedback, and emailed performance reports. Built in Python with Alexa Skills Kit, AWS Lambda, S3, and Neo4j to model narrative paths and decision relationships.

MentorApp Alexa - Smart Training | *Python, Alexa Skills Kit, AWS Lambda, AWS S3, DynamoDB* Mar. 2020 – Jun. 2020

- Built a free Alexa skill for daily productivity tips, ranked among the top 50 most downloaded skills in 2020 with 5,000+ downloads. Implemented Python and Alexa Skills Kit with AWS Lambda, S3, and DynamoDB.

CB2 (Come Back Tomorrow) | *Python, Windows, Cryptography* Mar. 2016 – Jun. 2016

- Created a controlled educational Python prototype inspired by ransomware behavior to demonstrate Windows file-access blocking, cryptography, and information-security concepts. Developed solely on test machines and files for academic use.

EXTRAS

- **Neo4j Certified Professional** — Professional certification, Neo4j, 2025.
- **LLM Engineering** — Extracurricular course, Kaggle, 2025.
- **Prompt Engineering** — Extracurricular course, AWS, 2024.
- **Design Patterns** — Extension course, Aeronautics Institute of Technology (ITA), 2023.
- **Introduction to Deep Learning** — Summer course, National Laboratory for Scientific Computing (LNCC), 2020.
- **Unveiling Linear Algebra and Optimization** — Summer course, National Laboratory for Scientific Computing (LNCC), 2020.
- **Digital Signal Processing for Time-Frequency Analysis: Audio Applications** — Summer course, National Laboratory for Scientific Computing (LNCC), 2020.

LANGUAGES

Portuguese: C2 | **English:** A2