

João Vitor Bermal Santaniello

Software Engineer · Geospatial Data, Full-Stack and E-commerce

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SUMMARY

Software engineer with six years of production experience across water utilities, energy, healthcare and telecom. I turn operational problems into working software: Python and GeoPandas data pipelines, ArcGIS Enterprise dashboards and web maps, FastAPI and Node.js services, and React and Next.js applications. For Aegea, one of the largest sanitation groups in Brazil, I build the geospatial analyses behind expansion and concession studies and the data model and dashboards of the Regenera landfill biogas operation. MBA in Software Engineering from USP/ESALQ with a 9/10 thesis in computer vision. Fluent in English from years of work with US clients and international AI benchmark programs. I also design brands and online stores, most recently Miao Atelier, a cat furniture brand I built and run for the US market.

EXPERIENCE

Software Developer, Bizpoke Soluções em Software · São José dos Campos, SP

Dec 2022 to Present

Aegea · Expansion planning and Regenera

- Cut a recurring geospatial workflow from more than 3 hours to about 20 minutes by building Spatial Extractor, a reusable Python and GeoPandas tool with parallel spatial joins, validation, grouping, area calculation and Excel/Shapefile export.
- Delivered census tract indicators for 16 Brazilian states by crossing IBGE census data, CNEFE addresses and ANEEL BDGD electricity records, giving the expansion team demand estimates for water and sewer concession studies.
- Co-designed the CITIUS/Regenera data model for landfill biogas operations and loaded its historical and theoretical data (wells, drains, PDRs, collectors, readings, landfill stages), which feeds dashboards with measurement beacons, normalized CH4 classes and weekly filters.
- Removed manual steps from weekly routines by automating stage calculations, symbology standardization, file ingestion and PostgreSQL materialized view refreshes with ArcGIS toolboxes, Python and FME.
- Kept production dashboards running through the ArcGIS Enterprise 11.5 portal migration by auditing and fixing panels, evaluating Experience Builder as a Dashboards replacement and writing a governance script that reports unused portal items for cleanup.
- Took new products from request to production, such as a critical work order dashboard and a field data collection panel, running requirement refinements with Aegea teams, validating data in staging and documenting the dashboard portfolio for a new team.

Equatorial Energia · DOMO field app

- Led front-end and mobile delivery for DOMO, building an offline-capable map component in React Native (Expo) with feature create, edit and delete, attribute forms, extra layers and tablet support.
- Prototyped the project validation flow in Figma and implemented it in Next.js, TypeScript, Redux and MUI after sign-off from Equatorial.

Healthcare, telecom and international utilities

- Built OCR exam processing with AWS Textract, Tesseract and S3, plus a Raspberry Pi and Orthanc deployment, for a remote teleophthalmology service.
- Developed ISPDive, a SaaS platform for internet providers, with a Next.js and Redux front end, FastAPI services and DigitalOcean Spaces storage with signed URLs.
- Automated GIS and utility workflows for North Las Vegas and Duke Energy (through SBS) working in English with US teams, and integrated SAP, IBM Maximo and Schneider Electric systems through Python and JavaScript SDKs.

AI Coding Benchmark Contributor (freelance), Alignerr · Remote

May 2025 to Present

- Wrote complex Python problems with reference solutions, test suites and failure analyses for LiveCodeBench and BigCodeBench, each designed to break at least 2 of 4 frontier models (Qwen, DeepSeek, Claude Sonnet, Nova).
- Reviewed prompts, specifications and grading criteria for code generation, self-repair and execution tasks in the Mango and Fairylights programs, working fully in English with global teams.

Software Development Intern, Bizpoke Soluções em Software · São José dos Campos, SP

Apr 2021 to Dec 2022

- Shipped features for client projects in React, Node.js, Python and C#, versioned with Git across several teams.

- Produced, analyzed and published spatial data with ArcGIS Pro and ArcGIS Enterprise, collaborating with offshore teams in English.

Web Development Intern, NFe Sistemas · São José dos Campos, SP

Oct 2020 to Mar 2021

- Delivered front-end and back-end changes from business requirements with HTML, CSS, JavaScript, jQuery, PHP and MySQL.

SELECTED PROJECTS

Miau Atelier, Founder, designer and developer · 2026

miauatelier.com

A cat furniture brand for the US market, built end to end: brand identity, Shopify store in USD with Stripe, Python automation over the Shopify Admin GraphQL API and an AI image pipeline that turns supplier photos into editorial product photography.

NAMMAN, Web product

namman.vercel.app

A live app that runs entirely in the browser and syncs amplifier profiles to the user's computer, with secure sign-in and no server.

EDUCATION

MBA in Software Engineering, Universidade de São Paulo (USP/ESALQ)

2024 to 2026

- Coursework in software architecture, APIs, micro-frontends, cloud, Docker and Kubernetes, DDD, observability, testing, UX, AI and Big Data, leadership and change management.
- Thesis (9/10): a three-stage deep learning pipeline for retinal photographs (vessel segmentation, artery/vein classification and arteriolar-to-venular ratio) as a cardiovascular risk marker. PyTorch and OpenCV on DRIVE, IOSTAR, RITE and LES-AV; Dice 0.827 and macro F1 0.963.

Associate degree in Systems Analysis and Development, Universidade Paulista (UNIP)

2021 to 2022

- Software design, databases, web and back-end development and project management, completed while working full time.

Technical Program in Computing, with high school, Colégio Técnico Antônio Teixeira Fernandes

2018 to 2020

- Programming, web development and algorithms, including team programming competitions.

SKILLS

Languages: Python, TypeScript, JavaScript, SQL, Bash

Data and GIS: GeoPandas, ArcGIS Pro, ArcGIS Enterprise 11.5, ArcGIS Dashboards, Experience Builder, ArcGIS JS API, FME, PostgreSQL, enterprise geodatabases, ETL and data modeling

Back end: FastAPI, Node.js, REST APIs, JWT, OAuth, WebSockets, MongoDB, PostgreSQL

Front end and mobile: React, Next.js, Redux Toolkit, Tailwind CSS, MUI, React Native (Expo), Figma

Cloud and DevOps: Docker, Docker Compose, NGINX, Linux, AWS (S3, Sagemaker, EC2), DigitalOcean Spaces, Vercel, Kubernetes (basic)

AI and ML: PyTorch, OpenCV, NumPy, Albumentations, OCR, LLM evaluation, AI coding agents (Claude Code, MCP)

E-commerce and design: Shopify (Admin GraphQL, Liquid), Stripe, brand identity, generative image pipelines

Ways of working: Scrum, Git and GitFlow, Jira, ClickUp, Bitbucket, technical documentation, remote work with US and offshore teams

LANGUAGES · COURSES AND EVENTS

Portuguese (native) · English (fluent, daily professional use)

Python 3: Deep Dive, Part 1 (Udemy, 2025) · Deep Learning Using ArcGIS (Esri, 2024) · ArcGIS Fundamentals (Esri, 2021) · AWS Summit São Paulo (2023) · Esri Developer Summit (2022)