Rodrigo Bressan

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Software Engineer with expertise in **healthcare**, **cloud architecture** (AWS, GCP), and **HIPAA-compliant** systems. Experienced in working with cross-functional teams to design secure and scalable AI-driven solutions for healthcare applications.

SKILLS

Languages & Frameworks	Go, Python (Django, FastAPI), Typescript, Databases (Postgres, MySQL, MongoDB), Front-end (React, Vue)
Cloud and Infrastructure	AWS, Google Cloud, IaC (Terraform, CloudFormation), Docker, Kubernetes, Argo CI/CD, ELK, Grafana Loki
Healthcare-related	HIPAA, GDPR, EHR management, HL7v2, FHIR, AWS services (HealthLake, Comprehend, Transcribe), LLM models (Med-PaLM, Llama 2, OpenAI)

WORK EXPERIENCE

Senior Software Engineer/Tech Leader (Contractor, Europe and US) — Nov 2022 - Current

- Led the design and implementation of a **HIPAA-compliant data lake on AWS**, optimizing secure data storage for healthcare applications and reducing operational costs and maintenance overhead
- **Developed an AI-powered medical application** for exchanging ePHI across facilities, integrating with **LLM models (OpenAI)** for conversational interactions
- Guided the implementation of **audit controls** and **RBAC**, ensuring compliance with **HIPAA** technical safeguards
- Mentored 7 engineers, onboarding them on the company's development standards and providing career guidance

Full Stack Engineer (Empatica, Italy) — Jul 2020 - Oct 2022

- Built REST/gRPC APIs & **remote patient monitoring** dashboards for clients including **Eli Lilly**, **US Health Services** and **UK NHS**
- Developed a **HIPAA-compliant ePHI data lake** using a mix of **Lambdas**, **S3**, and **Firehose**, cutting costs by **30%** while ensuring scalability for over **2M+ records processed on a daily basis**
- Led the development of compliance reports for clinical trial studies, easing the identification of non-compliant subjects

Software Engineer (Bill and Melinda Gates Foundation, Brazil) — Jul 2018 - Jun 2020

- Performed ETL tasks on **public health datasets (>450 million data points)**, as well as the **training of ML models,** in order to support the decision-making on the prevention of infant mortality for public health units in Brazil
- Set up multi-GPU infrastructure for data engineers, allowing them to quickly train and deploy Machine Learning models
- Led the adoption of **multithreading/parallelism** techniques, **improving by 35% the performance of existing ETL pipelines**

Software Developer (Cleevio, Czech Republic) — May 2016 - Dec 2017

- Led the development and coordination of interactions between PMs, POs, QA and design team on the development of a mobile application from zero until its production release on App Stores for the EU market
- Defined a set of **architectural models** to be adopted across new projects, resulting in more modular and testable components

Intern Software Developer (Movile, Brazil) — Jan 2014 - Jul 2015

- Developed native Android applications, integrating with REST APIs, along with CI/CD to app stores

EDUCATION

- **BsC in Computer Science**, Federal Institute of Technology of São Paulo *(2015 - 2018)*
- Minor in Data Science & AI, with published research papers on healthcare/public health field
- Certification on *Healthcare Data Security, Privacy, and Compliance, University of Rotterdam (2024 - 2024)*
- Certification on *Foundations of Healthcare Systems Engineering, Johns Hopkins University (2024 - 2025)*

PUBLICATIONS & RESEARCH

- AI to Predict Infant Mortality Using Health Data from São Paulo, **European Population Conference (2020, Italy)**
- Maternal characteristics and the risk of infant mortality in Brazil (2006-2016), **International Journal of Population Studies**
- Determinants of the Infant Mortality Risk in Brazil (a ML approach), **Population Association of America (2020, Washington)**

OPEN SOURCE & PROJECTS

SOAPy (live demo)

- SOAPy converts unstructured medical notes (audio and text-based) into a structured SOAP format using LLM models

Tech stack: Python, Deepgram (text-to-speech), OpenAI (processing)

DocAnon (live demo)

- Automatically anonymize ePHI from medical notes, ensuring compliance with privacy regulations (e.g. HIPAA)

Tech stack: Python, Deepgram (text-to-speech), SpaCy (ePHI recognition)

HIPAA Analyzer (live demo)

- Automatically analyze compliance documents against HIPAA privacy, security, and breach rules

Tech stack: Python, OpenAI

PERSONAL INTERESTS & HOBBIES

- Languages: English (fluent), Portuguese (native), Italian (intermediate), Spanish (basic), Polish (*currently learning*)
- Others/Hobbies: climbing, DIY (woodworking, fixing broken things), campervans, volunteering in dog shelters