

Carlos Agarie

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<https://github.com/agarie>

<https://agarie.net.br>

Work Experience

- **Tarmac** Remote
Senior Software Engineer *August 2022 – current*
 - Automated time-consuming, manual processes by building an automatic data acquisition and processing pipeline using APIs from external vendors. Processes that took 3 to 4 days of work for a Senior Business Analyst now take around 20 minutes.
 - Spearheaded the design and creation of new features for the main application, from idea to deployment and analytics.
 - Optimized the database architecture which reduced index sizes and improved query performance up to 120% in a dozen endpoints.
 - I mentored the team on how to do better Code Reviews.
 - Documented large parts of the codebase, focusing on low-level code docs and system-wide design docs.
 - Refactored several parts of the Rails codebase to improve maintainability.
- **Mercúrio Digitalizações** Remote
Co-founder and Principal Engineer *December 2016 – July 2022*
 - Helped top-tier cultural institutions digitize and preserve historically-relevant documents following globally-recognized archival standards.
 - Customization of several digital repository software packages (DSpace, AtoM and Archivematica, Collective Access, Tainacan) to our client's needs.
 - Managed AWS IAM Policies and Roles for our engineering team.
 - Made architectural decisions and cost analysis for deployments using AWS services.
 - Built several internal tools and libraries in Ruby for data processing and metadata extraction.
 - Developed CI pipelines for our projects using GitHub Actions.
 - Used Python to implement algorithms for fast and precise stitching for large-scale digitized documents.
 - Designed custom themes for digital repositories following web standards and focusing on user accessibility.
- **Vulcano** São Paulo, Brazil
Senior Engineer *January 2019 – September 2020*
 - Designed and built a low-cost scanner for large, fragile documents. The scanner was successfully used to digitize three collections of historical maps from *Paulista Museum*, one of the largest cultural institutions in Brazil, and thousands of architectural plans from the City of São Paulo.
 - The company received a grant from *The São Paulo Research Foundation (FAPESP)*, a large institution tightly integrated in the Brazilian scientific community.
- **Fundação Darcy Ribeiro** Remote
Software Engineer *August 2015 – March 2017*
 - Customized a DSpace installation for the National Institute of Historical and Artistic Heritage.
 - Wrote Python scripts for pre-processing documents and metadata files.

- **Tapps Games** São Paulo, Brazil
Data Engineer *March 2015 – July 2015*
 - Improved an internal data aggregation system based on Ruby on Rails, integrating it with several services and APIs.
 - Created interactive reports for management using Jupyter Notebooks widgets.
- **Geekie** São Paulo, Brazil
Software Engineer *May 2013 – February 2015*
 - Worked on several web applications using Python, the Flask and Pyramid frameworks, MongoDB, and other technologies.
 - Co-developed an internal tool for automating and reproducing experiments.
 - Contributed to internal libraries related to Item Response Theory and Bayesian Learning models.

Education

- **Polytechnic School, University of São Paulo** São Paulo, Brazil
MSc *2015 - 2017*
 - Master of Science in Machine Learning (*unfinished*)
 - Coursework: Deep Learning, Statistical Modeling, Compilers and Programming Languages
- **Polytechnic School, University of São Paulo** São Paulo, Brazil
Engineer's Degree *2009 - 2014*
 - Specialization in Control Engineering
 - Coursework: Mathematical Modeling, Software Simulations, Control Theory, Statistical Analysis
- **Embry-Riddle Aeronautical University** Prescott, AZ
Exchange Student *2012 - 2013*
 - Specialization in Computer Engineering
 - Received a Full Scholarship from the Science Without Borders program of the Brazilian Federal Government
 - Coursework: Computer Architecture, Operating Systems, Real-Time Systems

Technologies

I'm interested in diverse programming languages, paradigms, and tools. I use git whenever I touch a computer and it's where I store tens of thousands of personal study notes, while Ruby is my language of choice for day-to-day scripting and prototyping.

- **Ruby:** Ruby on Rails, RSpec, Sidekiq,
- **Python:** numpy & scipy, Jupyter Notebooks, webscrapers, Flask, Pyramid
- **PHP:** WordPress, Symfony
- **JavaScript:** jQuery, TypeScript, React
- **Other programming languages:** Julia, Lua
- **Unix:** PostgreSQL, bash/zsh scripting, command-line utilities, git, vim/neovim, LaTeX