Facundo Branbate

Personal Information

Montevideo, Uruguay
fabran99@gmail.com https://fabran99.github.io/

Profile

I'm a Software Developer from Uruguay, specializing in backend development with Python for **data science and AI systems**. I have deep experience with **APIs**, geospatial and time-series data, machine learning, and building **RAG** systems using **LangChain** and LLMs. I also have frontend experience with **ReactJS**, enabling me to create full-stack solutions from start to finish.

Skills

Backend Development: Python, Django, Flask, Celery.
Databases: PostgreSQL, MongoDB, Redis, Firebase, S3.
Data Science & AI: Machine Learning, TensorFlow, Pandas, LangChain, FastAI.
Frontend Development: JavaScript, ReactJS, Electron.
Data Handling: Pandas, Geopandas, Numpy, S3, Jupyter Notebooks.
APIs: RESTful API Design, API Development, Postman.
DevOps: Docker, Version Control (Git, GitHub, GitLab), AWS.
Languages: English, Spanish.

Work Experience

Software engineer
Marco Fintech
11/2022 – present
https://marcofi.com

I led backend development for several key projects, contributing significantly to both architecture and implementation.

Key achievements include:

- **Architected and integrated** Airwallex API, enabling new banking features like payments, account creation, and card transactions.
- **Developed an LLM-powered system** for automating credit and legal checks, shortening manual review time by 5-10 hours per client.
- **Automated invoice funding processes with OCR and LLMs** cutting processing time by 1-2 days. This streamlined operations, accelerated client payments, and increased revenue by reducing interest-related losses.
- **Refactored and enhanced Salesforce integration**, improving the previous data flow and reducing synchronization issues by 95%, leading to better information management across platforms.

Freelance Data scientist
Smartway
11/2022 – present
https://www.onsmartway.com/

Contributed to backend development and data science projects at Smartway, focusing on key initiatives that enhance agricultural innovation.

Key contributions include:

- **Handled data extraction, dataset generation, and model training** in collaborative projects with INIA and ORT University.
- **Developed AI models** using satellite imagery from Google Earth Engine, and climate data from NASA POWER to predict agricultural yields months in advance.
- **Managed multi-year data from thousands of farms across Latin America**, covering hundreds of thousands of hectares, with datasets of hundreds of GBs of satellite imagery and climate data.
- **Improved risk management** for insurance companies by providing early yield predictions, helping them prepare for potential losses from adverse conditions like drought or hail.

Work Experience

Backend Developer/Data Scientist
Smartway
01/2020 – 11/2022
https://www.onsmartway.com/

As a Backend Developer at Smartway, I focused on designing and implementing data-driven backend solutions, particularly in geospatial and time series analysis.

Key accomplishments include:
- **Refactored the core of a data API** to utilize Pandas, shortening the response time of multiple endpoints and reports from minutes to just a few seconds.
- **Developed a GPS-based system** with fingerprint integration that automated payroll, allowing administrative staff to manage payments for dozens of drivers instantly, with zero time-tracking errors.
- **Built a real-time auditing system** for harvesters, generating detailed field yield reports using GPS and sensor data, enhanced with climate indicators and satellite imagery.
- **Created datasets and trained models**, including one that replaced work sensors on seeders, achieving better accuracy and cutting hardware installation costs by 25%.

Full stack developer
Spymovil
03/2019 – 01/2020
https://www.spymovil.com

As a Full-Stack Developer at Spymovil, I developed software solutions for critical infrastructure monitoring, working with prominent clients like OSE and UTE.

Major achievements:
- **Developed and implemented APIs** to streamline sensor data processing and deliver real-time statistical insights, significantly improving data accessibility and usability.
- **Led full-stack development** using ReactJS, Python, Django, and Pandas to create robust systems that ensured efficient data interpretation.
- **Designed intuitive web interfaces** that enhanced user experience and facilitated seamless interaction with complex datasets.

Portfolio

Galia: AI-Powered Legal Assistant
https://fabran99.github.io/portfolio-work-4/

Galia is an AI platform designed to enhance legal workflows with tools for document analysis, drafting, legal research, and answering legal questions.

Highlights of Galia:
- **Legal Question Answering**: Provides accurate and contextually relevant answers by analyzing vast legal information.
- **Comprehensive Legal Research**: Enables deep semantic searches across legal documents, including official sources like IMPO and Uruguayan law journals.
- **AI-Assisted Document Drafting**: Supports drafting and refinement of legal documents with AI-driven insights and corrections.
- **Automated Information Management**: Efficiently manages and organizes large volumes of legal data, enhancing retrieval speed and accuracy.

Data Analysis App for Agriculture
https://fabran99.github.io/portfolio-work-2/

This agricultural app collects and analyzes data from satellites and combine harvesters using GPS, performance, and humidity sensors to generate actionable insights. The app works with real-time data from agricultural producers in Uruguay, Brazil, Argentina, and Paraguay.

Core Features:
- **Real-Time Data Collection**: Utilizes GPS and sensor data to monitor harvester performance and field conditions.
- **Precision Agriculture Support**: Automatically generates yield maps and detailed reports during

and after harvest.
- **Comprehensive Field Reporting**: Provides producers with reports covering the entire crop cycle, including climate evolution and key field indicators from start to finish.

Real-Time Assistant for League of Legends

https://fabran99.github.io/portfolio-work-1/

This desktop app, built with **ReactJS, Electron** and **Python**, connects directly to the game in real time via web sockets. It provides instant recommendations and allows users to load optimal character setups with a single click, saving players time and enhancing gameplay.

Features of the App:
- **Live Game Integration**: Connects to the running game via web sockets, analyzing in-game data in real-time.
- **Real-Time Recommendations**: Offers strategic advice based on second-by-second analysis of live game stats.
- **One-Click Optimal Configurations**: Instantly loads the best character setups, optimizing performance and saving time.