FEDERICO BECONA

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Areas of knowledge

● Generating **impactful** and **scalable Machine Learning** solutions in production at the **largest company** in Latin America for the last three years with models and APIs **receiving 100k+ RPMs**.

● Specialized in **Natural Language Processing** and **Computer Vision** problems using data techniques such as **preprocessing**, **vectorization**, and **embedding generation**. Experienced in working with various models, including **BERT, OpenCLIP, OpenCV, FastText, ScaNN**, and **FAISS**, and utilizing LLM **agents** and retrieval techniques (**RAGs**).
● **Experience with backend** frameworks like **Java Spring, Python Django,** and **Node JS**.
● Experience in designing and implementing APIs for synchronous and asynchronous services, with b**atch processing, jobs,** and **message queues**.
● Skilled in handling extensive data from data warehouses **(BigQuery**), relational databases (**MySQL, PostgreSQL**), and NoSQL databases (**MongoDB, Redis**), Vector Databases (**AlloyDB**).
● Good technical background from my **bachelor's degree in Computer Science.**

Professional experience

Mercado Libre

Designing and implementing end-to-end AI/ML solutions regarding Natural Language Processing and Computer Vision with backend services for synchronous and asynchronous consumption of the models.

Semi-Senior Machine Learning Engineer (Jan 2025 – Present)

- Designed and implemented microservices to clusterize the drop shipping offer in the platform and standardize it with the local one. More than 40% of 40M publications from international sellers were clusterized providing a better customer experience for searching. The technologies used were Open Clip, Vector Database (Alloy DB), an LLM agent (GPTs), Java Spring Framework, MongoDB and BigQuery.

Machine Learning Developer (May 2022 – Dec 2024)

- Designed and implemented a bot to enhance data for product attributes asking sellers about their publications with templates depending on the kind of product, preprocessing their answers, using NLP models for extracting values from those texts, and then voting between similar publications to get the best value to be applied for all similar publications with the possibility of reasking the sellers and voting again if no satisfactory value was found. Metric: +12k new values were obtained.
- Implemented a solution for image preprocessing and embedding generation in a batch concurrent process, to later be used in a synchronous API with +200k RPMs to find duplicate and group similar publications by their images. Metric: +35k publications were found as duplicates.

Education

Bachelor of Science - Computer Science (2018 - 2022)
Catholic University of Uruguay, Montevideo, Uruguay
Thesis: "Green Manager". An environmental indicator management web platform for DERES, a network of companies (including Coca-Cola, Nestlé, Unilever, and Roche) committed to sustainable development.

Projects

My machine learning portfolio shows a variety of projects from the Artificial Intelligence course that I took in college, where I received the highest grade in class. The portfolio website was built using Angular and is available at https://federicobecona.github.io/machine-learning-portfolio/ In addition, I have developed many projects covering fields such as Machine Learning, Algorithms and Data Structures, Web Development, Databases, Security, and more. Those are available on my GitHub https://github.com/federicobecona

Languages

English (advanced), Spanish (native)