Marcelo Mottalli

Staff Software Engineer and Computer Vision Researcher

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Summary

I am a software engineer and computer vision researcher with expertise in solving complex problems at scale, specializing in optimization and AI technologies. With a Master's in Computer Science (honors, GPA 8.62/10), I have developed web systems, big data analytics, AI-driven payments, and biometric technologies. My career includes leading teams at companies like Shopify and Google, delivering high-performance solutions that serve millions of users and generate significant revenue. I excel in low-level optimizations, distributed systems, machine learning, and research environments, consistently achieving results through effective leadership and technical innovation.

Experience

Staff Software Engineer, Shopify – Dublin, Ireland Sept 2021 – present

At Shopify, a leading e-commerce platform, I work as a Staff Software Engineer in Shopify Payments, our main revenue source processing $41.1B in 2025 transactions. As a Staff Engineer, I collaborate with other technical teams to make key technical decisions for the product.

- I led a project to revamp the refund system, preventing fraud-related losses and saving $2M annually through improved security measures.
- I am working on integrating AI into dispute resolution to enhance how we manage customer disputes.
- Skills: Ruby on Rails, MySQL, Yugabyte, BigQuery, LLMs (OpenAI)

Staff Software Engineer, Zendesk – Dublin, Ireland Aug 2019 – Sept 2021

At Zendesk, I worked on the team responsible for Zendesk Explore, our analytics product. The team implemented, executed, and monitored ETL pipelines for analyzing customer data at large scale, primarily using Hadoop (Scala) in AWS.

- As a Staff Engineer, I led the design and implementation of a generic data ingestion system using Java and Reactive Vert.x, providing a unified way to ingest data from various sources and reducing the time and effort needed for integrations compared to the previous ad-hoc approach.

Software Engineer Lead, Grandata – Buenos Aires, Argentina Mar 2018 – Aug 2019

As Lead Developer at Grandata, I managed the development of a personal data monetization platform, overseeing the team to ensure high-quality product delivery.

- I managed a team of 8 people and was the main driver of technical decisions.
- I promoted agile methodologies and team management practices, supporting effective product development.
- Skills: leadership, management, Scrum/agile development, interviewing; React, React Native, NodeJS, AWS, GraphQL, MongoDB

Customer Solutions Engineer, Google – Mountain View, CA June 2016 – Mar 2018

At Google, I worked as a Customer Solutions Engineer, providing technical support to sales teams by developing solutions for advertisers using the AdWords platform.

- I collaborated across teams, using my coding and communication skills to create prototypes, demos, and educational materials that generated significant revenue for Latin America's biggest companies (such as MercadoLibre, Despegar) and the Argentine Government.
- Skills: cross-team collaboration, customer facing, project management, digital advertisement; Python, Javascript, Angular, Google Cloud, AdWords

Director of Data Infrastructure, Grandata – Buenos Aires, Argentina Sept 2012 – June 2016

As Director of Data Infrastructure at Grandata, I led the team responsible for providing real-time insights on large volumes of data for human analytics.

- I was the main developer of an in-house analytics database implemented in C++, which was highly efficient, processing millions of rows per second on low-cost hardware.
- I oversaw the processing of data for hundreds of millions of users, focusing on optimizations to improve cost-effectiveness.
- Skills: C++, LLVM, Python, Scala, Spark, Hadoop

Systems Engineer Intern, Google – Mountain View, CA Jan 2012 – Mar 2012

During my internship at Google, I worked on the backend for reCaptcha, integrating StreetView data to improve image analysis at scale.

- I developed a new approach to incorporate StreetView information into reCaptcha, speeding up the analysis of street images significantly.
- Skills: C++, Google stack

Systems Engineer, GForge Group LLC – Buenos Aires, Argentina Feb 2005 – Sept 2012

As the main developer at GForge, I redesigned the web-based collaboration tool used by companies like GE and Raytheon, focusing on architecture and optimization.

- I designed the architecture for the new version and developed most of the core code, with extensions in Java and C#, leading to a stable system still in use today.
- Skills: PHP, PostgreSQL, SCM tools (Git, SVN), Linux administration

Intranet Systems Programmer, Avatar S.A. – Buenos Aires, Argentina May 2003 – Feb 2005

At Avatar, I designed and implemented corporate intranets for major Argentine companies, including TGS, the country's largest gas supplier.

- I single-handedly implemented the e-commerce website for Fravega, Argentina's largest electronics retailer.
- I addressed performance issues in the PHP framework by implementing effective caching solutions.

Education

University of Buenos Aires, Master in Computer Sciences – Buenos Aires, Argentina Sept 2006 – June 2008

I graduated with honors, achieving a stellar GPA of 8.62/10, showcasing my academic excellence.

- Thesis: Real-time Identification of Persons using Iris Recognition
- Advisor: Dr. Marta E. Mejail

University of Buenos Aires, Bachelor in Computer Sciences – Buenos Aires, Argentina Sept 2002 – June 2006

I built a strong foundation in computer science, preparing me for a career of innovation.

Publications

Supervised Biometric System Using Multimodal Compression Scheme Sept 2012
W. Chaabane, R. Fournier, A. Naït-ali, J. Jacobo, M. Mejail, M. Mottalli, H. Ramos, A. Frery, P. Viana
https://doi.org/10.1007/978-3-642-33275-3_47 (17th Iberoamerican Congress on Pattern Recognition (CIARP 2012))

A Contrario Detection of False Matches in Iris Recognition Nov 2010
M. Mottalli, M. Tepper, M. Mejail
https://doi.org/10.1007/978-3-642-16687-7_59 (15th Iberoamerican Congress on Pattern Recognition (CIARP 2010))

Flexible Image Segmentation and Quality Assessment for Real-Time Iris Recognition Nov 2009
M. Mottalli, M. Mejail, J. Jacobo
https://doi.org/10.1109/ICIP.2009.5414530 (Proceedings of the 2009 16th IEEE International Conference on Image Processing (ICIP), pp. 1941-1944)

Real-time Identification of Persons using Iris Recognition Oct 2008
Master's Thesis (in Spanish)
M. Mottalli
www-2.dc.uba.ar/grupinv/imagenes/archivos/tesisMottalli2008.pdf

Skills

Programming Languages: Ruby, Rust, C, C++, Python, Scala, PHP, SQL (MySQL, PostgreSQL, Yugabyte), x86 assembly, HTML, JavaScript, XML, Java, C#, Perl

Technologies & Frameworks: AI/LLMs, Machine Learning, Optimization, Distributed Systems, Big Data (Hadoop/HDFS, Spark, Cassandra, HBase), Libraries (Boost, STL, wxWidgets, QT, OpenCV, OpenGL, CUDA, OpenCL), Unix/Linux, SCM (SVN, Git, Mercurial), lex/yacc, MATLAB, Valgrind

Management & Methodologies: Team leadership, Scrum/Agile development, Cross-team collaboration, Project management

Honors

- PICT Scholarship (Scientific and Technology Research Program)
- IEEE Membership
- Argentine Astronomy Association Membership

Projects

LeechProxy Mar 2023 – present

A proxy implemented in Elixir to filter unwanted websites during certain hours for improved productivity.

- Built using Elixir for concurrency and fault-tolerance.
- Enhances focus by blocking distractions during work hours.

Snel Jan 2013 – Aug 2016

Snel (SQL Native Execution for LLVM) is a database engine written from the ground up which uses SQLite as a frontend but compiles SQL queries into native code using the LLVM compiler frontend. The objective is to provide blazingly fast SQL queries in low-cost hardware.

- Built in C++ and using the LLVM library
- Industry-proven

Interests

Cooking
Photography
Astronomy
Running