MARIANO CROSETTI

Computer Science (Msc. equivalent) ◇ Argentinian - Italian

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EXPERIENCE

QuarkAI - Software Engineer - AI/Deep Learning Specialist *Santa Clara, CA*   *April 2022 - Present*
- Developed a translation system from natural language to structured queries, achieving 95% recall at 90% precision.
- Designed a CorrectiveRAG architecture that incorporates reranking models fine-tuned with RLHF.
- Reduced costs by more than 70% using model distillation in our most frequent usages of LLMs.
- Designed, implemented, and orchestrated the middleware infrastructure for caching queries, monitoring potential data shifts.
- Applied PEFT techniques to Llama models using QLoRA.

Ventilemos - Co-Founder - Tech Director - ventilemos.com.ar   *Argentina*   *November 2020 - April 2022*
- Trusted by more than +25 Multinational Companies, +10 Research Institutes and Universities, and +15 Government Institutions.
- PCB design and circuit analysis with Eagle toolkit. Firmware programming in Arduino C++ for Atmega328P.
- Designed and implemented an IoT centralized system (using MQTT and MERN stack for the platform) for ESP32 processor.
- Collaboration with the city, state, and national public decision-makers, joining our company to VentilAR nationwide campaign.

Santa Fe Electoral System - Machine Learning Engineer *Argentina*   *January 2021 - December 2021*
- Implemented signature recognition at Android app used in National elections making the task safer and 2x faster. Pytorch used.

Endcoronavirus Volunteer - Data Scientist - Frontend - Sysadmin - covidargentina.com.ar   *May 2020 - December 2020*
- Launched Shiny dashboard covidargentina.com.ar (+1000 users monthly) by collaborating with NECSI and EndCovid.
- WebServer maintenance, databases update crontabs, software patches deployment (CI/CD), SSL certificates, DNS healthy checks.

Brightsector Algorithms - Machine Learning Engineer *Argentina*   *August 2018 - September 2019*
- Consultant for MercadoLibre, enhancing attribute extraction to boost search capabilities for LATAM's top e-commerce platform.
- Achieved a 350% increase in attribute extraction recall at top GMV product domains, significantly boosting search functionality.

Google Inc - Software Engineering Intern at Google Stadia - *Mountain View, California*   *January 2018 - April 2018*
- Extended a Chromecast's service to support different (audio/video) settings and device switching.
- Coordinated the cross-functional collaboration with graphics, API, and infrastructure teams.
- Developed in C++ working with PulseAudio and Vulkan. Frontend extended using JS.

Google Inc - Software Engineering Intern at Google Codejam - *San Francisco, California*   *June 2017 - September 2017*
- Researched, designed, and implemented solutions to improve the user experience and support a larger scale of users.
- Worked on a platform to run Code Jam and other competitions. Worked in C++, using a NoSQL database for storage.
- Attended the Code Jam World Finals 2017 in Dublin as a staff member.

Politecnico High School - IOI Programming Contest Trainer   *March 2011 - December 2012*

PROJECTS

- Created a problem with a novel application of Segment Tree for 2019 ICPC Latin America Regional. Member of the judge board.
- Assisted as an international professor at Cundinamarca Training Camp 2019: teach about advanced data structures for strings.
- Created a Haskell DSL interpreter for a functional programming language with copatterns (generalization of pattern matching). Improved the work of [Abel, Pientka, Thibodeau, Setzer] by proposing a linear covering algorithm (they introduced NP algorithm).
- Implemented a handwritten signature verification system by using Siamese Network and Triplet Loss. Pytorch + FastAI used.

SKILLS

Proficiency Programming Languages	C/C++, Python, JavaScript, Haskell, Java
Web Stack	SQL, MongoDB, GraphQL, React, Redux, NodeJS, Express
Data Analysis	Pandas, Numpy, Flask, Dash, R., Shiny
Deep Learning	CUDA, Pytorch, FastAI Library, Keras, TensorFlow
NLP	Stanford CoreNLP, spacy, LLaMa, GPT, Langchain, Llama Index
Software & Tools	GNU/Linux, GIT, Gitlab, Github for collaborative development

EDUCATION

Universidad Nacional de Rosario - Computer Science (BsC + MsC equivalent) - GPA: 9.83/10	*March 2011 - March 2018*
Friend of Fulbright Scholarship - Organized by U.S. Embassy	*January 2016 - March 2016*
Instituto Politecnico General San Martin - High School (second-best grading)	*March 2005 - December 2010*

ACM ICPC COMPETITIVE PROGRAMMING

The oldest, biggest and most prestigious global collegiate programming contest organized since 1970, bringing in 400,000 participants. Focuses on advanced algorithms and teamwork.
- **ACM ICPC World Finalist contestant**: Morocco 2015 (87° place), Thailand 2016 (28° place) **Latin American Champion**
- **ACM ICPC World Finalist coach**: Portugal (2019), Egypt (2023), Kazakhstan (2024).
- **International professor**: Buenos Aires, Argentina (2018, 2023), Bogot, Colombia (2019), Lima, Peru (2024).
- **Board Member of ICPC Argentina**: Head of Sponsorship Relations (2023-2024), Training Camp Director (2024).