Matías Ignacio Silva Cares

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EXECUTIVE SUMMARY

Electrical Engineer from the University of Chile (2017) with more than 9 years of experience in **software development**, technology leadership, and team management in start-ups and technology companies. He has held roles as **full stack developer**, **tech lead**, and **CTO**, leading end-to-end projects and multidisciplinary teams.

In recent years, he has specialized in **artificial intelligence**, with a practical focus on language models (**LLMs**), **RAG systems**, and **multi-agent** flows. He currently works at LabLab, where he has led the implementation of generative AI solutions using OpenAI to structure and classify large volumes of CV text. He has also researched the use of technologies such as **Vespa.ai** for the development of efficient search and matching engines between professional profiles and job offers.

He seeks new challenges where he can continue to deepen his understanding of generative AI, contribute as a specialist with innovative solutions, and be part of a team that values both technical development and good management of people and projects to become an **AI leader** in the near future.

WORK EXPERIENCE

LabLab, Santiago, Chile

Lead AI Engineer   february 2024 - currently

- He implemented an automatic **CV classification** using the OpenAI API in a Jupyter Notebook script, struct the output in JSON format for analysis on a database over 50,000 documents. All this was achieved through process parallelization, reducing execution time by **10x** and at a cost of less than **13 %** of the budget
- He designed and developed custom prompts for structured information extraction, information validation, and semantic classification of professional profiles, with inference quality monitoring.
- He researched and evaluated **Vespa.ai** technology to create an efficient **semantic search engine** for CVs and job postings, considering integration with embeddings and scalability in production.

SKILLS:

Vespa.ai · OpenAI · Prompt Engineering · LLM · MongoDB· Python · Jupyter Notebook

eSponsor, Santiago, Chile

AI Engineer - Freelance   october 2024 - january 2025

- Conducted in-depth research on **FLUX model architecture**, achieving **fine-tuning** for generating realistic images of existing individuals with higher precision and likeness.

- Trained and optimized various **FLUX models** using fine-tuning techniques via **Replicate**, iterating hyperparameters and refining training sets for **6 users** who were active content creators.
- Utilized the **OpenAI API** with the **GPT-4o model** to generate ideal prompts, improving the generative quality for FLUX models.
- Implemented advanced **Image-to-Text** inference solutions using **OpenAI** and **HuggingFace APIs** to enrich training sets and improve results.
- Designed and implemented a platform for a **e-commerce assistant chat** with a multi-agent architecture. The sub-agents were implemented with **Langchain** and **Langgraph** and used RAG to extract product information and respond to the user. They also accessed a database to read and write purchase order information. The MVP was built using **React** and **Vercel** for production deployment, along with **FasAPI** and **PostgreSQL** (with the **pgVector** extension for embeddings) for agent and endpoint implementation. Performance and action monitoring for this multi-agent chat was achieved by integrating **Langsmith**.

SKILLS:

Machine Learning · OpenAI · HuggingFace · FLUX · LLM · Python · Postgresql (PgVector) · Langchain· Langgraph · Langsmith · React · Vercel

Rovisen, Santiago, Chile

Software - ML Engineer October 2023 - October 2024

- Designed and developed a **modular GIS platform** from scratch, integrating **Deep Learning** models inference for satellite image analysis and **intelligent cartography data generation**.
- Built an interactive **Frontend** using **React** and an efficient **Backend** with **FastAPI**, deploying the platform in a **serverless environment** using **AWS Lambda** and **API Gateway**.
- Integrated a **map visualizer** using **Leaflet**, adding interactive tools for visualizing and analyzing Machine Learning results.
- Collaborated with the **Machine Learning team** to design inference modules and databases for processing **high and low-resolution satellite images**.
- Led the **development roadmap**, managing work using **SCRUM methodology** for agile delivery.
- Implemented **CI/CD strategies** to accelerate production deployment, improving release timelines.
- Led AWS resource optimization alongside **MorrisOpazo** (AWS partner), securing AWS credits and accelerating the platform's MVP release.

SKILLS:

Python · Postgres · PostGIS · GeoServer · Amazon Web Services · Docker · Javascript · FastAPI

Evoting Global, Santiago, Chile

Development Team Lead January 2022 – June 2023

- Led a growing team, starting with one junior developer and scaling up to manage a team of **4 full-stack developers**, promoting both technical and professional growth of its members.
- Directed the **creation, improvement, and maintenance** of the company's technological services, contributing to its position as a **regional leader in electronic voting**.
- Planned and executed **short and medium-term objectives** using **AGILE methodologies**, focusing on measuring results through **KPIs** and periodic reports to **stakeholders**.

- Led the adoption of the **Cypress framework** in the **QA area**, automating usability testing and improving the quality of technological platforms.
- Acted as a key liaison between the **Product and Development teams**, prioritizing requirements, organizing **Sprints**, reviewing **code** and **Pull Requests**, and managing releases with detailed **ChangeLogs**. This role combined responsibilities of **Product Owner** and **Scrum Master**.
- Played a key role in **DevOps**, managing **AWS infrastructure** with **Terraform**, optimizing IAM security policies, configuring **CI/CD pipelines**, and applying best practices from the **AWS Well-Architected Framework**.
- Led both technical and administrative team processes, including **recruitment**, setting **performance goals**, facilitating training, professional growth, and managing team contracts.

SKILLS:

Software Project Management · Team Leadership · Technical Recruiting · Project Planning · Agile Methodologies · Amazon Web Services · Docker · MongoDB · Scala · React.js · Terraform · GitHub

Evoting Global, Santiago, Chile

Full-Stack Software Developer   August 2021 – January 2022

- Designed and implemented **key improvements and fixes** for the **EHolders web application**, optimizing its performance and functionality.
- Developed an **MVP** to integrate the **Zoom SDK** into the platform, enabling **video calls** as a native and integrated software component.
- Automated **CI/CD processes** by implementing **pipelines in AWS** using **CodePipeline** and **CodeBuild** for projects based on **React** and **Scala**.
- Managed infrastructure updates with **Terraform Cloud**, applying changes to **Task Definitions** for **Fargate ECS clusters** in AWS.
- Introduced and expanded the use of **Linear App** to implement **AGILE methodologies**, establishing **Sprints**, estimating issue costs, and optimizing task distribution within the team.
- Prepared and presented **official reports** on the progress and launches of the Development Team to the entire organization in **weekly meetings**.

SKILLS:

Amazon Web Services · Docker · JavaScript · Agile Methodologies · MongoDB · Scala · React.js · GitHub

SoyMomo, Santiago, Chile

Chief Technology Officer (CTO)   April 2019 - June 2021

- Led the expansion of the technology team, starting with one **Android developer** and scaling up to manage **5 development areas**: **Machine Learning**, **Mobile Software**, **Web Software**, **Industrial Design**, and **Hardware Development**, with a team of over **10 professionals**.
- Planned and executed the team's **short- and medium-term strategy**, implementing **AGILE methodologies** and optimizing organization using the **Monday** management tool.
- Managed operations for both the **Hardware and Software teams**, including **recruitment**, **salary improvements**, cost and expense reporting, project planning, and task facilitation to ensure high team performance.

- Acted as a strategic link between the technology area and other key departments (**Customer Service**, **Marketing**, **Operations**, and **Technical Support**), ensuring effective communication and directly reporting progress and strategy to the **CEO**.
- Collaborated directly with **Chinese suppliers** to improve the quality of **hardware** and **firmware** for technological products, participating in the **initial design** and overseeing the **mass production** of new devices.
- Led the development and successful launch of new products, including: **SoyMomo Space Watch**, **SoyMomo Space 2.0**, **SoyMomo Tablet Lite 2.0**, and **SoyMomo Tablet Pro 2.0**.
- Made strategic decisions regarding the company's technological processes, including maintaining and improving the **Backend architecture**, defining **hardware specifications**, developing **software** for child-oriented products, and creating mobile applications for parents.
- Managed the **quotation** and selection of suppliers for new technological products, implementing **cost reduction strategies** without compromising quality.

SKILLS:

Hardware · Quality Control · Project Management · Software Project Management · Team Leadership · E-Commerce · Technical Recruiting · Project Planning · Machine Learning · Agile Methodologies · Bitbucket

Sefora (Private Service), Santiago, Chile

Freelance Full-Stack Developer July 2018 - November 2018

- Designed and implemented a **document and file management software** with full functionality, including **authentication** (login), dynamic forms, **automated email** sending, and recurring tasks.
- Developed the web application using **Angular 6** for the **Frontend** and **Firebase** for the **Backend** and NoSQL database management.
- Implemented a **backend server** with **Flask** to process multiple files, combine them, and generate a **compressed file** available for real-time download, deploying it on **AWS**.

SKILLS:

Angular 6 · Firebase · AWS (S3, EC2) · Flask

SPEC Energy Consulting, Santiago, Chile

Full-Stack Developer August 2017 - April 2019

- Maintained and optimized the **Cloud architecture** on **AWS**, implementing **auto-scaling** for **EC2 instances** and configuring the deployment of new versions using **Docker images**.
- Performed **code refactoring** processes for the internal software AMEBA, achieving significant improvements in:
  - **Logging performance** during the execution of electrical simulations.
  - **Efficient loading** of large data volumes in the **Frontend**.
  - Overall **user experience (UX/UI)** of the platform.

- Led the **scalability** of the platform, optimizing database queries, implementing **data-binding** to update the client in real time, and decentralizing web server operations. Used **AWS** to scale resources on demand through additional instances.

Skills:

Groovy · AngularJS · JavaScript · AWS (S3, EC2) · Docker · MongoDB

Sosmart Labs, Santiago, Chile

Mobile and Full-Stack Developer August 2016 - August 2017

- Implemented a **web platform** for **SoyMomo Smartwatches**, focused on technical support and **incident tracking**, optimizing repair management processes.
- Created and standardized **operational protocols** for the **technical support** area, improving the efficiency of device servicing for SoyMomo.
- Developed a **web dashboard application** for the **192 Smart** initiative in Brazil as a pilot project for the **Sosmart** application.
- Implemented **improvements** and developed **new features** in the **iOS application** for SoyMomo Smartwatches, contributing to the product's evolution.
- Created a **mobile game demo** using **augmented reality** with **Unity**, showcasing innovative capabilities in video game development.
- Designed and implemented a **hardware prototype** based on the **Sosmart algorithm** for **automobile detection**, as part of his **undergraduate thesis**.

Skills:

Arduino IDE · JavaScript · Unity · Swift (Programming Language) · Ruby on Rails · Back4App

HistoriaClínica (Start-up), Santiago, Chile

Co-founder and Full-Stack Developer August 2015 - August 2016

- Developed a **web application** for managing **medical records**, **accounting**, and **patient scheduling**, specifically designed for **independent healthcare professionals** and **small medical centers**, with a business model based on **monthly subscriptions**.
- Implemented and managed the **web platform**, providing continuous **technical support**, overseeing the **commercial strategy**, and handling **advertising and marketing actions** to promote the service.
- Coordinated the **sales strategy** and **customer acquisition**, working directly with end users to ensure satisfaction and optimize product usage.
- Designed and implemented continuous improvements to the **user experience (UX/UI)**, based on user feedback to enhance workflow efficiency and application usability.

Skills:

JavaScript · HTML5 · CSS · Ruby on Rails · PostgresSQL · Heroku

Biometry-Pass, Santiago, Chile

Professional Internship   December 2014 – February 2015

- Researched and implemented **computer vision algorithms** applied to the **technical specifications** of **iPhone** and **iPad** devices, evaluating their performance and documenting results and conclusions in technical reports.
- Developed **iOS application prototypes** using hybrid libraries such as **OpenCV** (C++/Objective-C) and **Swift**, applying image processing and computer vision techniques in mobile environments.

Skills:

C++ · Swift (Programming Language) · Objective-C

RESEARCH

Robotics Laboratory, Universidad de Chile, Santiago, Chile

Undergraduate Researcher - Supervisor: Javier Ruiz-del-Solar   2012 – 2014

- Conducted **research and development** of **computer vision algorithms** applied on **Windows** and **Linux** platforms, using **C/C++** as the main programming language.
- Worked with **NAO humanoid robots** from **Aldebaran Robotics**, developing and implementing perception and control solutions.
- Contributed to the **preparation and writing** of the official registration document for the **UChile Robotics Team** for the international competitions **RoboCup 2013** and **RoboCup 2014**.
- Participated as an **official team member** of the UChile Robotics Team in **RoboCup 2014** held in **João Pessoa, Brazil**, achieving **4th place** in the competition.

EDUCATION

Universidad de Chile
Department of Electrical Engineering, FCFM, Santiago, Chile

Electrical Engineering   2011 - 2017
Highest distinction: 6.2/7.0

AWARDS AND ACKNOWLEDGMENTS

Universidad de Chile, Santiago, Chile

Highest distinction (7.0/7.0) in the final degree examination.   2017

Finalist with HistoriaClinica of the OpenBeauchef entrepreneurship competition.   2015

Outstanding Electrical Engineering student.   2011-2012-2014

Ministry of Education, Government of Chile, Santiago, Chile
National High School Scholarship for undergraduate studies. 2011

PSU National Mathematics Test. 2010

SKILLS

Programming Languages: Python, JavaScript, TypeScript, Java

Machine Learning and AI: PyTorch, Pandas, NumPy, OpenCV, Jupyter Notebook, LangChain, Langgraph

Generative AI: OpenAI, HuggingFace, Replicate, Midjourney, GroqAPI

Libraries and Frameworks: FastAPI, Flask, React

Cloud Services: AWS, Google Cloud Platform, Mongo Atlas, Firebase, Supabase, Vercel

Containers and DevOps: Docker, Terraform Cloud, CI/CD (AWS CodePipeline, CodeBuild, GitHub Actions)

Databases: PostgreSQL, MongoDB

Version Control: GIT (GitHub, Bitbucket)

Planning and management: Agile (SCRUM), Microsoft Office, Monday, Trello, Linear, ClickUp, Notion

Others: GIS (Geoserver), Unity (AR)

LANGUAGE

Spanish: Native.
English: Advanced.

ACTIVITIES AND INTERESTS

He is passionate about technology and science, staying up-to-date with innovations and the release of smart products and services from leading global technology brands.

He exercises regularly, training in the gym during the week to maintain an active and healthy lifestyle. He is an avid fan of international tennis and global football, closely following major tournaments and being a dedicated supporter of Colo-Colo.

For two years, he lived as a digital nomad in various cities around the world, mainly in Europe, which allowed him to gain valuable cultural experiences and significantly improve his spoken English.

He values in-person work as an opportunity to strengthen team cohesion, foster a positive work environment, and build meaningful professional relationships.