Agustín Kamke Mardones

Electrical Engineer · Founder of the AI area at SALFACORP · Applied AI & Google Cloud

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Electrical Engineer from Pontificia Universidad Católica de Chile, top 5% of my cohort. I founded the AI area at SALFACORP, a construction and industrial group with more than 20,000 workers, and grew it to **twelve developments in production** — roughly one new product from zero to production each month, built and run on Google Cloud. I prototype fast, validate in the field and ship systems that have to work outside the lab.

EXPERIENCE

SALFACORP — AI Engineer, founder of the AI area — Aug 2025 — present

Construction and industrial group · more than 20,000 workers · Santiago, Chile

- **Founded the company's AI area** and drove adoption across more than 20,000 workers: twelve developments live, shipping about one new product a month.
- Designed the **migration to Google Cloud** that puts AI inside day-to-day operations; the architecture is becoming the company standard for new AI applications.
- Built **fleet telemetry for 418 connected machines**: GPS and sensor data into Cloud SQL (PostgreSQL), with utilization, fuel, maintenance and alert dashboards on Cloud Run.
- Scaled **TruckScan**, a LiDAR and computer-vision system that returns load volume, weight and material class for every truck pass, with devices deployed across Chile.
- Shipped **SSOMA Studio**, a multi-user Veo 3 video editor on Google Cloud that produces worker-safety content in the company's own branding.
- Created a reusable app template where user feedback and usage signals drive the next release, typically within two weeks.

UC Center for Astro-Engineering — Robotics & RF Engineer — Jan — Jul 2025

- Built autonomous, GPS-referenced drone workflows for antenna and radar characterization, combining robotics, RF instrumentation and software control.

SEIDOR — AI & Computer Vision Intern — Second half of 2024

- Built computer-vision solutions and integrated Gemini, ChatGPT and Claude into controlled enterprise workflows.

Pontificia Universidad Católica de Chile — Hardware & Software Developer — Mar — Aug 2023

- Designed an educational sensor and communications board adopted by the Programmable Electronic Systems course and used by more than 150 students.

Komatsu — Engineering Intern — Dec 2022 — Mar 2023

- Reverse-engineered an undocumented GTO firing-control card, reimplemented its logic in Verilog on an FPGA, validated it against the original and designed a drop-in CPLD replacement board in Altium.

PERSONAL PROJECTS

- **Digital twins and robot simulation** — physics-based models of mining processes and robotic cells: a 4,800-body SAG mill in NVIDIA PhysX, leach chemistry on the GPU with NVIDIA Warp, UR10e, UR20 and Unitree G1 robots in MuJoCo, and a georeferenced seawater-supply twin calibrated within 0.5 bar, rendered in Omniverse (OpenUSD).

- **VTOL fixed-wing drone** — designed and built from scratch: airframe, propulsion, power stage and flight electronics.

EDUCATION

Pontificia Universidad Católica de Chile — Electrical Civil Engineering 2019 — 2024

- Specialization in Robotics and Automatic Control. **Top 5% of cohort** (rank 41 of 889), GPA 6.1 / 7.0.
- Teaching Assistant: Signals & Systems (IEE2103); Programmable Electronic Systems.

SKILLS & LANGUAGES

Cloud	Google Cloud Platform — Cloud Run, Cloud SQL (PostgreSQL), Cloud Storage, Compute Engine, Secret Manager; Firebase Hosting
AI & vision	Computer vision, object detection, LLM integration (Gemini), generative video (Veo 3)
Simulation	NVIDIA Omniverse, OpenUSD, PhysX, Warp, MuJoCo, Blender
Robotics & sensing	ROS 2, LiDAR and point clouds, fleet telemetry and IoT, UAVs
Programming	Python, C / C++, TypeScript, SQL, Flask, Next.js
Hardware	PCB design (KiCad, Altium), FPGA and Verilog, CPLD, Raspberry Pi, Jetson, power electronics
Languages	Spanish (native) · English (C1, TOEFL iBT 97) · German