LUCAS ABELLO

Computer Science Student — AI & Software Engineering Enthusiast

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About Me

I am a computer science student specializing in AI applications with hands-on experience in multi-agent systems, LLM fine-tuning, NLP, and RAG implementations. I have experience developing hierarchical ML architectures and software-hardware integrations. Active competitor in IEEE Xtreme and hackathons, demonstrating problem-solving and collaborative skills. Seeking to advance AI-driven software development with real-world impact while continuously expanding my technical expertise.

Projects

pparser github.com/pparser Present

Multi-agent PDF-to-Markdown conversion system that transforms documents into LLM ready formats for RAG systems and other applications.

- Used langGraph for development of the LLM system and created 7 different agents that work alongside to accomplish the task.
- Created the system as a Python package to easily import it and use it on any python code or even from the terminal.
- Technologies used: Python, LangGraph and LLMs.

CELLM github.com/CELLM 2024-2025

Developed an automated genetic circuit design system during my first research internship that generates biological circuits based on logical descriptions provided by the user.

- Developed a multi-agent system for automated genetic circuit construction
- Fine-tuned LLM agents to analyze and synthesize biological circuits
- Implemented RAG (Retrieval-Augmented Generation) system to extract biological components, accelerating configuration file selection
- Built Golang CLI integration for the pipeline execution
- Technologies used: Python, Golang

Deaf-PI github.com/SLML 2024

Sign language translation device

- Developed hierarchical machine learning architecture with cluster-based sign detection: primary models identify sign clusters, followed by specialized models for precise sign recognition within each cluster
- Integrated custom API for seamless communication with Raspberry Pi hardware platform
- Built custom ML models using Python, TensorFlow, and OpenCV for real-time image processing and sign detection

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Education

Universidad Diego Portales Santiago de Chile

Civil Engineer in Computer Science and Telecommunications 03/2022 - Present

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Languages

English B2