Adán Flores Ramírez

+1 408-312-1647 | afr102903@gmail.com | linkedin.com/in/adanfr | github.com/afr2903 | adanfr.com/

Education

Instituto Tecnológico y de Estudios Superiores de Monterrey — Guadalajara, Mexico
Ph.D. in Computer Science. Deep Reinforcement Learning for Robotics — *Aug. 2025 – May. 2028*

Instituto Tecnológico y de Estudios Superiores de Monterrey — Nuevo León, Mexico
B.S. Mechatronics Engineering 96/100; Leadership in Professional Development Award — *Aug. 2021 – Jun. 2025*

Massachusetts Institute of Technology — Remote
Data Science and Machine Learning program (Statistics & Mathematics) — *Dec. 2024 – Mar. 2025*

Work Experience

AI Engineer — July 2025 – Present
Stealth Startup — *Remote*
- Closed B2B deals with restaurants for automating their order taking, by developing a low-latency voice agent and a whatsapp bot using Livekit and FastAPI, as measured by first 3 clients paying a setup fee and price per call.

AI Engineer — Jan. 2025 – Present
Pefai — *Remote*
- Enabled data flywheel leading to iterative improvement of 20% speed and 13% performance on newly launched B2C AI system design platform, by establishing custom evals based on embeddings for objective metrics.
- Improved hit-rate of AI responses by 30% in benchmarks by refactoring structured outputs to use BAML.

Undergraduate Research Assistant — Sep. 2024 – Dec. 2024
Massachusetts Institute of Technology - Device Realization Lab — *Cambridge, MA*
- 1st author in *Immersive Cognitive Factory Twin: Optimizing Industry 5.0 with a VR, ML, and LLM Framework.* Yielded 43.9% throughput increase and a 43.6% scrap reduction in simulation against baseline. **Under Review**.

Software Engineer Intern — June 2024 – Sep. 2024
Google - Cloud AI & Industry solutions — *Sunnyvale, CA*
- Optimized resource consumption for data ingestion processes by refining critical C++ components and implementing rigorous SQL-based end-to-end testing, leading to a more scalable and reliable data infrastructure.

Robotics Software Engineer Intern — Jan. 2023 – May 2024
ITESM - Smart Factory — *Monterrey, Mexico*
- Led a team in developing and integrating behavior coordination algorithms for multi-robot systems using ROS and Python, demonstrating experience in building complex robotics systems and collaborative software development.

Research & Projects

IEEE/SICE SII 2026 | *Robotics, Software Design, System Integration, HRI* — Aug. 2025
- 1st author in *Software Toolkit for RoboCup@Home: Modular and Hierarchical Architecture for Service Robots.* Enabled scalable and robust cross-platform performance, validated in real-world conditions. **Under Review.**

Springer LNAI MICAI 2025 | *Natural Language Processing, LLMs, LH Task Planning* — July 2025
- 1st author in *Taming the LLM: Reliable Task Planning for Robotics.* Achieved 96.5% success in task planning with fine-tuned 8B model in NVIDIA Jetson, against non-fine-tuned (29.6%) and cloud model (90.4%). **Accepted**

RoboCup @HOME Competition | *C++, Python, ROS* — Nov. 2022 – May 2025
- Led the development of an autonomous service robot with 4 software areas: computer vision (3D, object detection, video data labelling), HRI, manipulation and navigation. Obtained 6th place internationally.

IEEE LARC Open Challenge - Robot Development | *C++, Python, ROS* — Jan. 2023 – Oct. 2023
- Led a team in developing and deploying an autonomous driving robot for warehouse automation, implementing real-time visual odometry and image classification with a 3D camera.

Technical Skills

Languages: Python, C++, Bash, CUDA, C#, Go, Elixir, Java, SQL
Technologies: ROS, PyTorch, Unity, CARLA, TensorFlow, JAX, FastAPI, LangChain, Linux, Git, Docker