

Adán Flores Ramírez

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EDUCATION

Instituto Tecnológico y de Estudios Superiores de Monterrey Nuevo León, Mexico
B.S. in Mechatronics Engineering — GPA: 95/100 *Aug. 2021 – Jun. 2025*

Massachusetts Institute of Technology Remote
Data Science and Machine Learning program: Making Data Driven Decisions *Dec. 2024 – Feb. 2025*

WORK EXPERIENCE

AI Engineer Jan. 2025 – Present
Pefai *Remote*

- Secured bank client by implementing new API creation functionalities in the low-code platform in Kotlin.
- Designing and implementing AI micro-service from scratch with a team, using Autogen framework and FastAPI.
- Optimized API creation with AI from N^2 to constant, by engineering a parallel agent task distribution within the AI service, as measured by total computing time

AI & VR/AR Research Assistant Sep. 2024 – Present
Massachusetts Institute of Technology - Department of Mechanical Engineering *Cambridge, MA*

- Led research project to generate a publication at peer-reviewed journal: Production & Manufacturing Research.
- Developing a VR simulator to enhance the performance of factory operations as measured by KPIs, implementing PCA, neural networks, and a fine-tuned SLM as support decision, within Unity.

Software Engineer Intern June 2024 – Sep. 2024
Google - Cloud AI & Industry solutions *Sunnyvale, CA*

- Developed core C++ components for a distributed data processing pipeline, increasing data synchronization efficiency and contributing to improved search platform performance.
- 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.

Software Engineer Intern - AI Integration Aug. 2023 – Mar. 2024
Imatix Robotics *Remote*

- Developed and deployed a high-performance, real-time voice assistant platform using Python, showcasing experience in building and deploying AI-driven solutions and integrating with cloud services.
- Optimized the platform's response times, achieving a 25% reduction in latency by implementing efficient data transfer techniques and multithreading in Python, demonstrating a focus on performance optimization.

PROJECTS

RoboCup @HOME - Robot Development | *C++, Python, ROS* Nov. 2022 – Present

- Led the development of an autonomous service robot with 5 software areas, gaining valuable experience in robotics, AI/ML, problem-solving, and working in a fast-paced, collaborative team environment
- Designed and implemented a hierarchical state machine to manage complex robot behaviors from a speech input, showing proficiency in software architecture and integration principles.
- Streamlined robotic arm operations by developing a C++ algorithm to optimize placement for object manipulation tasks, achieving an efficient $O(N)$ time complexity solution and reducing task execution time.

IEEE LARC Open Challenge - Robot Development | *C++, Python, ROS* Jan. 2023 – Oct. 2023

- Led a team in developing and deploying a robot control system for warehouse automation, showcasing experience in collaborative project leadership, systems integration, and problem-solving within a dynamic robotics challenge.

TECHNICAL SKILLS

Languages: C++, Python, C#, Java, Javascript, Kotlin

Frameworks: ROS, Unity, TensorFlow, PyTorch, JAX, React, Node.js, Laravel, Borg, FastAPI

Tools: Git, Google Cloud Platform, Docker, Linux, Jira, Postman, LangChain