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*
Relevant coursework: Data Structures and Algorithms, Industrial Automation, Design & Development of Robots

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

Work Experience

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.
- Filled gaps in interactivity and upper automation pyramid layers of simulators, empowering factory personnel.
- Developing a VR environment to enhance the performance of factory operations as measured by KPIs, implementing relational DBs, 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 Engineer Intern — Jan. 2023 – May 2024
ITESM - Smart Factory — *Monterrey, Mexico*
- Developed and deployed robotic automation solutions within a simulated digital twin factory environment, demonstrating proficiency in C++ and Python for robotics applications.
- 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 - AI Integration — Aug. 2023 – Mar. 2024
Ixmatix 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.

Unity Developer — Nov. 2020 – Aug. 2023
Catapulta Academy — *Remote*
- Developed and debugged complex game features within a resource-constrained Unity environment, demonstrating proficiency in C#, Javascript, and cross-platform development.
- Successfully reduced application load times by 80% through data-driven analysis and optimizations.

Projects

RoboCup @HOME - Robot Development | *C++, Python, ROS* — Nov. 2022 – Present
- Contributed to the development and deployment of an autonomous service robot, gaining practical experience in robotics, software integration, and working in a collaborative, fast-paced environment.
- Designed and implemented a hierarchical state machine to manage complex robot behaviors, demonstrating proficiency in software design principles and state management techniques within a robotics context.

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
Frameworks: ROS, Unity, TensorFlow, PyTorch, JAX, Node.js, Laravel, Borg
Tools: Git, Google Cloud Platform, Docker, Linux, Jira, Postman