

Jesus Soto Gonzalez

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portfolio!

Education

Iowa State University | Ames, IA

Bachelor of Science in Software Engineering

GPA: 3.61

Minor in Artificial Intelligence

Expected Graduation: December 2025

Relevant Coursework: Data Structures and Algorithms, Embedded Systems, Operating Systems, Web Development, Database Management Systems, Principles of Artificial Intelligence, Machine Learning, Natural Language Processing.

Des Moines Area Community College | Ankeny, IA

Associate of Applied Science in Diesel Technology

GPA: 3.77 | Graduated: May 2021

Technical Skills

Programming & Software: C, C++, Python, Java, JavaScript, TypeScript, SQL, React, Next.js, Node.js

Embedded & Controls: Motor control, ROS2, CAN bus communication, sensor integration

Platforms & Deployment: Linux, Unity, Android SDK, Firebase, Supabase, MongoDB, Vercel, Docker

Vehicle Systems & Diagnostics: Powertrain/hydraulics, pneumatics, HVAC/refrigeration, electrical, and fuel systems

Professional Experience

Agropecuaria RG | Remote

Full-Stack Web Developer | July 2025 – Present

- Developed a full-stack platform with a public marketing site and a secure admin dashboard for business operations.
- Built features for land rental management, renter registry with contracts, and employee payroll tracking.
- Implemented invite-only authentication, route protection, and secure password reset flows with Supabase.
- Deployed on Vercel using Next.js, TypeScript, Tailwind CSS, shadcn/ui, and Supabase for scalable backend services.

Brown National Lease | Iowa Falls, IA

Certified Diesel Technician | May 2021 – May 2022

- Diagnosed and repaired electrical, fuel, hydraulic, HVAC, and mechanical systems using schematics and diagnostic tools.
- Performed hands-on maintenance on diesel engines, transmissions, and electronic control systems.
- Interpreted wiring diagrams, hydraulic schematics, and fuel system blueprints to troubleshoot complex faults.
- Performed preventive maintenance and DOT inspections to ensure safety, reliability, and regulatory compliance.

Iowa Select Farms | Jewell, IA

Maintenance Technician | August 2017 – May 2021

- Performed preventive maintenance and safety inspections on facility systems to reduce downtime and ensure compliance.
- Collaborated with operators to diagnose reported issues, communicate repair plans, and document completed work.

Projects

GridAI – Smart Grid Management Platform | Senior Design Project

Tech: React, TypeScript, Kafka, Firebase, WebSockets

- Built a customizable widget system for live electric grid telemetry with real-time JSX editing.
- Integrated Kafka and WebSockets for streaming grid data into dynamic, user-defined dashboards.
- Developed secure RESTful APIs for widget management with Firebase auth and Firestore persistence.

Probabilistic Escape-Pursuit Planning | Principles of Artificial Intelligence Final Project

Tech: Python, NumPy

- Developed a top-ranked AI agent for a probabilistic multi-agent grid simulation with uncertain movement.
- Combined A* pathfinding with a rotation-aware strategy using EMAs and a sliding window estimator.
- Achieved 1st place by dynamically switching between pursuit, evasion, and neutral modes based on real conditions.

Fully Autonomous System Development | CprE 288 Embedded Systems Final Project

Tech: C, iRobot, Sensors

- Programmed autonomous navigation using SONAR and IR sensors with real-time obstacle avoidance.

Leadership / Activities

Cardinal Space Mining Club | Safety Officer & Controls Team Member

- Created safety protocols, trained members, and enforced PPE/EHS standards; led safety for the CoSMiC competition.
- Designed and debugged motor controls for Lunabotics prototypes, supporting smooth teleop-to-autonomy transitions.
- Implemented ROS2 nodes with CAN bus messaging to integrate onboard computing and motor actuation in real time.

Software Engineering and Computer Science Club | Member

- Contributed to collaborative coding sessions and tech talks focused on modern software practices.

SHPE | Member

- Collaborated with peers in workshops and events focused on Latino excellence in STEM.