

TEVIN DE LA GARZA

Machine Learning & Embedded Systems Engineer | Control Systems & Full-Stack Data Solutions

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SUMMARY

Engineer with expertise in machine learning, embedded systems, control theory, and full-stack data solutions. Designs and delivers high-reliability software and intelligent systems for aerospace, robotics, and automation. Bridges hardware and software – from embedded protocols and control loops to cloud-based ML pipelines and real-time analytics – to reduce complexity, accelerate decisions, and deliver measurable value.

SELECTED ACHIEVEMENTS

- Built and deployed ML workflows with human-in-the-loop feedback, increasing analytical precision and reducing manual review time by over 70%.
- Implemented advanced control systems (PID, sensor fusion, GNSS navigation) for autonomous robotics in outdoor and indoor environments.
- Developed processor emulation and real-time simulation tools to catch integration issues early, improving system stability and reducing test cycle time.
- Led multi-bus embedded system integration (MIL-STD-1553, RS-422, I²C, SPI) for robotics and aerospace applications.

EXPERIENCE

Embedded Software Engineer

United Launch Alliance

Sep 2021 – Present

Centennial, CO

- Developed and validated embedded software for safety-critical systems under strict real-time, reliability, and compliance requirements.
- Designed and deployed a modular, cloud-based data pipeline integrating ingestion, processing, ML, and visualization for high-volume telemetry.
- Built deep learning and classical ML workflows with human-in-the-loop feedback, improving precision and reducing manual review time by over 70%.
- Prototyped AI-assisted diagnostic tools for rapid root cause identification and prioritization.
- Resolved performance bottlenecks in real-time simulations by aligning scheduler behavior with processor architecture.
- Created processor emulation tools for pre-integration testing, reducing deployment risk.
- Led telemetry workflow training across engineering teams, standardizing analysis processes.

Senior Design Project Lead – Sponsored by Trimble Inc.

University of Denver

Jan 2020 – Jun 2021

Denver, CO

- Directed a 5-member team to design and build a low-profile autonomous robot for transporting safety test targets in dynamic perception testing.
- Integrated ROS2, C++, and OpenCV pipelines to prioritize payload visibility and meet ISO safety standards.
- Implemented GNSS positioning, multi-bus communication, and PID control for precise navigation.
- Delivered a working prototype, technical documentation, and a live demo to stakeholders.

Teaching Assistant – Electrical & Computer Engineering

University of Denver

Sep 2019 – Jun 2020

Denver, CO

- Assisted students in LabVIEW schematic design, embedded systems, and engineering fundamentals.
- Provided one-on-one mentorship and supported lab exercises.

Apple Technician / Retail Associate

Aug 2018 – Sep 2021

Follett Higher Education – University of Denver Bookstore

Denver, CO

- Performed Apple hardware diagnostics, repairs, and upgrades as an Apple Certified Macintosh Technician (ACMT) within a high-traffic campus bookstore.
- Managed retail operations: textbook sales, inventory stocking, point-of-sale transactions, and customer service for students, faculty, and staff.
- Developed a lightweight inventory automation script that reduced stock counting time and improved accuracy during audits.

PROJECTS

Autonomous Robot – Junior Design Project

Jan 2020 – Jun 2020

- Designed and implemented an autonomous mobile robot with SLAM navigation and omnidirectional drive.
- Developed custom embedded control and PID tuning to achieve high-precision movement and drift reduction.
- Integrated LiDAR and camera systems into ROS for mapping, localization, and obstacle avoidance.
- Created a wireless control interface for remote operation and testing.

EDUCATION

University of Denver

Denver, CO

Master of Science in Computer Engineering

Jan 2023 – Present

Focus: Machine Learning, Computer Vision, Optimization, Control Systems

University of Denver

Denver, CO

Bachelor of Science in Computer Engineering

Sep 2017 – Jun 2021

Specialization: Robotics, Embedded Systems, Instrumentation

Pikes Peak Community College

Colorado Springs, CO

Associate of Science

Aug 2015 – Aug 2017

TECHNICAL SKILLS

Languages: Python, C++, Ada, C, Bash, MATLAB, JavaScript, HTML/CSS, SQL, Verilog, VHDL, Assembly, $\text{\LaTeX}$

Frameworks & Libraries: PyTorch, TensorFlow, Scikit-learn, OpenCV, ROS, ROS2, FastAPI, Flask, React

Machine Learning & CV: Object Detection, Transfer Learning, Human-in-the-Loop, LLM Prototyping

Cloud & DevOps: AWS, Azure, Docker, Git/GitHub, CI/CD, Grafana

Embedded & Hardware: RTOS, MIL-STD-1553, RS-422, UART, SPI, I²C, PWM, ADC/DAC, PID Control, GNSS, Sensor Fusion

Simulation & Control: Processor Emulation, Real-Time Simulation, SLAM, MATLAB/Simulink, Gazebo

Process: Linux, Windows, Agile/Scrum, SAsE, Compliance-Driven Development, Technical Documentation