TONI GRUBESIC

Mechanical Engineer — Test Automation • Design for Manufacturing • Prototyping
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Summary

Mechanical engineer who builds things that work in the lab *and* on the floor. Blends CAD/DFM with Python/LabVIEW test automation to take systems from Concept → Design → Build → Validation. Experience spans instrument control (SCPI/serial), data pipelines, and rugged prototypes for HVAC and automotive/motorcycle applications.

Skills

Test & Automation: Python (pandas, matplotlib; instrument control/SCPI; serial/TCP-IP), LabVIEW, MATLAB, DAQ, test fixtures, data QC & reporting
CAD/CAM & DFM: SolidWorks, Fusion 360, GD&T, tolerance stacks, DFM/DFA, basic FEA; Fusion CAM
Manufacturing & Materials: 3-axis CNC, Manual Mill/Lathe, MIG/TIG Welding, Carbon fiber layup, 3D printing
Tooling & PM: Excel/Sheets, Primavera P6, Git
Domains: Batteries & thermal, HVAC systems, automotive/motorcycle systems, environmental chambers

Experience

Automation Engineer (Battery Testing) — Contract
Lawrence Livermore National Laboratory (LLNL), Livermore, CA | 2024–2025
- Developed a Python/LabVIEW framework to orchestrate battery cyclers, power supplies, and environmental chambers via SCPI/serial, enabling repeatable multi-instrument test recipes.
- Built modular drivers and a recipe executor with real-time logging and QC thresholds; reduced manual setup and error rate while improving test repeatability and traceability.
- Automated analysis and reporting (pandas/matplotlib) for quick turn of runs to plots/tables; authored user docs and trained researchers.
- Integrated safety interlocks and supported calibration procedures for compliant operation.

Project Engineer Intern
Harder Mechanical Contractors, Inc. | Summer 2024
- Created and maintained resource-loaded Primavera P6 schedules using a standardized WBS; coordinated updates with field and office.
- Built milestone tracking and lightweight cost dashboards that improved visibility to crews and PMs, helping keep scope aligned to budget and dates.
- Supported submittals, RFIs, and change tracking to shorten feedback loops and reduce avoidable rework.

HVAC Technician & Service Coordinator
GB Heating & AC, Pacheco, CA | Feb 2017–Dec 2025
- Performed inspections, diagnostics, and repairs on residential/commercial HVAC systems; documented work for compliance and warranty.
- Drove root-cause analysis and corrective actions to extend equipment life and reduce repeat visits; collaborated with customers on scope and scheduling.

Undergraduate Research Assistant — Ultralow-Temperature Systems
California State University, Chico | 2022–2024
- Contributed to a three-year effort designing and building a chamber for ultracold atom experiments.
- Fabricated/assembled precision mechanical components; supported instrumentation and vacuum integration, commissioning, and data collection; presented updates in lab meetings.

Education

B.S., Mechanical Engineering, California State University, Chico

Projects

Motorcycle Telemetry & Lean-Angle System — custom PCB + firmware + UI
- Integrated 9-axis IMU with TPMS/ECU/GPS for real-time analytics; designed the UI for a small on-bike display and implemented data logging.
- Developed sensor fusion and filtering, serial communications, and robust packaging suitable for vibration/weather. *(Repo/demo: _____)*

Chico State SAE Baja — Chassis & Welding (2022–2023)
- Designed/welded chassis components and validated for strength/rigidity; collaborated on manufacturing jigs and fit-up for repeatable assembly.