Christopher (Chris) Vallone

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SUMMARY

- Hands-on mechatronics / robotics engineer covering mechanical, electrical, firmware, and control.
- Took two prototypes from sketch to walking demo under $10k BOM each.
- Equally at home writing C++, Python, or welding TIG before lunch.
- Thrive in fast, ambiguous environments where yesterday was the deadline.

CORE SKILLS

Mechanical & Manufacturing: SolidWorks, Inventor (GD&T, FEA), Creo, CNC mill & lathe, sheet-metal fabrication.
Electrical & Embedded: Altium, high-voltage / power electronics, PCB bring-up, STM32, FreeRTOS, CAN, SPI.
Software & Control: C/C++, Python, MATLAB, JavaScript/React, reinforcement learning, Linux toolchain.

EXPERIENCE

Founder & Lead Mechatronics Engineer - Goblin Robotics
Austin, TX | Jan 2023 - Present
- Designed three low-cost walking robots with custom motor drivers and firmware.
- Reduced actuator cost 45 percent via modular BLDC gearbox (100+ units field tested).
- Implemented 50 Hz reinforcement-learning gait controller on Raspberry Pi CM4, improving terrain stability 30 percent.
- Managed sourcing, DFM, assembly tooling, test harness, and firmware CI.

Engineering Intern - Blood Shed Motors EV
Austin, TX | Jul 2019 - Jun 2020
- Built 400 V / 150 A battery test stand with thermal and pressure safeties for round-the-clock cell testing.
- Developed C firmware to parse BMS CAN frames and control cooling pumps, reducing validation time 25 percent.
- Assisted inverter re-harnessing and drive-unit teardowns for classic-car EV conversions.

SELECT PROJECTS

Bates Propulsion Labs Rocket Team - Test Stand & EE Lead
UT Dallas | Aug 2019 - May 2020
- Raised 20k dollars via UTDesign Startup Challenge; fired a 1 kN bipropellant engine within five months.
- Designed and welded steel test frame; integrated 24-sensor DAQ at 2 kHz with under 3 ms valve latency.
- Led pad safety and hot-fire operations: zero incidents across multiple full-duration burns.

SynQor HV Rack-Mount Supply - Senior Design Capstone
May 2022 - Dec 2022
- Architected a 3 kW isolated supply (180 V DC, 20 A) for military converter testing.
- Designed two-board 400 V layout in Altium; digital PID control over SPI; passed HALT and EMI pre-screen.
- Delivered functional unit plus 60-page verification report on time and on budget.

EDUCATION

B.S. Electrical Engineering - University of Texas at Dallas
Graduated 2022

CERTIFICATIONS & TOOLING

Autodesk Inventor Certified User | IPC-A-610 soldering | PSpice / LTspice | Git & CI/CD | DFM / DFA