BEN SCOTT

MECHANICAL DESIGN | AUTOMATION | MANUFACTURING SYSTEMS

Nampa, Idaho | 208-422-4932 | benscott210@gmail.com | linkedin.com/in/ben-scott-me

Mechanical Engineer and Technical Lead with 6+ years of experience bridging mechanical design, automated equipment engineering, and production software tooling. Combines SolidWorks product design, closed-loop motion and pneumatic controls, embedded C++ firmware, and Python/PyQt6 CAD and HMI applications to increase manufacturing throughput, precision, and engineering repeatability.

TECHNICAL SKILLS

Mechanical Design & Manufacturing: SolidWorks (CSWA), AutoCAD, ANSYS Workbench, MATLAB, DFM/DFA, BOM Management, Parametric Assembly Modeling, Additive & Subtractive Manufacturing

Automation, Controls & Hardware: Teensy 4.1 / Arduino, Closed-Loop Stepper Motion Control (CL57T), Pneumatic Actuation & Valving, Industrial Sensors & Safety Interlocks, Serial Telemetry & Watchdogs, Equipment Commissioning, PCB Soldering

Software & Engineering Automation: Python (PyQt6, pyserial, pywin32/COM, pyproj), Embedded C++, TypeScript, React, Firebase (Firestore / Cloud Functions), VBA, AutoLISP, ProjectWise Integration, Excel, Git, Automated Regression Testing

PROFESSIONAL EXPERIENCE

CANYON COUNTY WOODWORKING
2023 – Present

Founder & Lead Mechanical / Automation Engineer — *Nampa, Idaho*

- **Automated Equipment & Controls:** Designed, built, and commissioned a custom automated lumber cut-to-length machine integrating a closed-loop stepper linear carriage, pneumatic clamping and chop-saw actuation, laser board-edge sensing, and hardware safety interlocks—achieving **sub-±1 mm repeatability** and **increasing production capacity by 50%**.
- **Embedded Firmware & Operator HMI:** Developed custom Teensy 4.1 embedded C++ controller firmware (ramped motion profiles, bounded homing, soft limits, keepalive watchdog, and fault recovery) paired with a packaged **Python/PyQt6 desktop HMI** featuring live telemetry, a **branch-and-bound 1D cutting-stock optimizer**, offline machine simulation, and automated C++/Python interlock regression tests.
- **Manufacturing Operations Platform (MES/ERP):** Built a full-stack internal web application (**React, TypeScript, Firebase/Firestore, Cloud Functions**) managing modular Bills of Materials (BOMs), real-time inventory deduction and audit history, production scheduling, order-status synchronization, and job costing.
- **Product Design & Manufacturing:** Engineered standardized SolidWorks production CAD models and custom client configurations for a product line with **150+ saunas manufactured**, continuously iterating part and assembly designs for manufacturability (DFM), material utilization, and repeatable shop fabrication.

GTS, A KLEINFELDER COMPANY
May 2020 – Nov 2026

Technical Lead & Distribution Engineer — *Chico, California / Remote, Idaho*

- **CAD & BOM Automation Platform (BOM Studio):** Architected, deployed, and maintained a packaged **Python/PyQt6** desktop engineering application integrating **AutoCAD COM (pywin32), AutoLISP, GIS (pyproj), and ProjectWise** for automated drawing callout scanning, multi-client BOM reconciliation, automated CAD table generation, and hash-verified updates—validated by **650+ automated regression tests** and adopted by **16+ engineers** across multiple utility programs.
- **Zero-to-One Engineering Calculation Tooling:** Developed custom **VBA** trench-sizing and optimization software where no standardized calculation method previously existed, translating complex engineering and regulatory clearance requirements into repeatable, auditable designs for the 10+ engineer Butte County rebuild team.
- **AutoLISP & Drafting Standardization:** Built AutoLISP utilities and automated CAD-audit workflows to link drawing details, enforce block and attribute standards, eliminate repetitive drafting edits, and improve cross-team QA consistency.
- **Technical Leadership:** Promoted to Technical Lead overseeing gas and electrical distribution designs and joint-trench composite deliverables for the large-scale Butte County rebuild, mentoring engineers and leading technical QA/QC.

EDUCATION & CERTIFICATION

B.S., Mechanical Engineering | California State University, Chico — 2020

SOLIDWORKS Certified Associate (CSWA) | Mechanical Design