Brian S. McKinley

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EDUCATION

University of Central Florida — Orlando, FL
Bachelor of Science in Electrical Engineering with Honors | GPA: 3.60 — Expected May 2027

Lake-Sumter State College — Lake-Sumter, FL
Associates of Arts in General Studies | GPA: 3.70 — May 2023

Yu International Language and Cultural Academy — Shin-Okubo, Tokyo, Japan
Study Abroad Summer Course Certification — Aug 2023

EXPERIENCE

Instrumentation and Test Engineer — Orlando, FL
Material Properties Characterization Laboratory, UCF — 2025
- Designed custom DB15 adapters for accurate analog extensometry signal acquisition in material strain testing applications.
- Conducted full disassembly of retired industrial materials testing machines for safe disposal and part recovery.
- Serve as the lab's sole electrical engineer, supporting signal acquisition, sensor integration, and digital inventory.

Tutor of Mathematics and Calculus — Leesburg, FL
Lake-Sumter State College Learning Services — 2022 - 2023
- Tutored students from Algebra to Calculus III, significantly improving performance on student exams and grades through tailored one-on-one sessions.
- Created magnetic field dioramas and 3-D topological models to teach vector calculus, illustrating divergence and curl applications to have students physically interact with vector fields.

LEADERSHIP

Eagle Scout — Howey-in-the-Hills, FL
Highest achievement in the Boy Scouts of America — 2012 - 2017
- Directed a 12-member team in a waterfront park landscaping project for Howey, restoring unsafe terrain, controlling erosion, and saving $5000 in labor.
- Led yearly Scouting for Food drives, leading 8+ volunteers to collect hundreds of pounds of groceries for food banks.
- Commanded a 6+ member scout honor guard for Howey Civic events, presenting the colors to foster unity.

VOLUNTEERING

Center for Initiatives in STEM, UCF — Orlando, FL
STEM Day volunteer & electronic instructor — 2023 - 2025
- Constructed custom electronics kits, helping K-12 students understand electronics through hands-on learning.
- Taught electromagnetism basics at sponsored STEM outreach events, sparking student enthusiasm for engineering.

Habitat for Humanity — Mascotte, FL
Construction and electrical assistant volunteer — 2022 -2023
- Developed homes, gaining hands-on experience in framing, and roofing to create safe and stable housing for people in need.
- Collaborated with volunteer electricians and supervisors, ensuring high-quality and safe construction standards.

PROJECTS

Ancillary building Electrical System Installation — Yalaha, FL
Residential Installation — Sep 2025
- Engineered and installed a 120/240 VAC split-phase electrical system, including wiring, lighting, and breaker panels.
- Ensured compliance with National Electrical Code standards (NEC), which improved inspection readiness overall.
- Delivered a safe and functional installation powering 900-square-feet of building infrastructure.

Personal Engineering Projects — Yalaha, FL
Hardware & Software — 2020 - 2025
- Designed and deployed a personal website, learning front-end web development and create networking opportunity.
- Fabricated and repaired guitar electrical systems, removing noise & maintaining signal integrity for better amplification.
- Constructed a radio, receiving broadcasts by engineering resonant circuits and passive component tuning.
- Prototyped SMT and THT board designs, building low-power circuits for lighting and voltage regulation.
- Created model circuits including telegraphs, DC-motors and rectifiers for educational demonstrations.

TECHNICAL SKILLS

Hardware & Electrical :Circuit Design & Analysis, RTL Design, Testbenches, FPGA Prototyping, Soldering (SMT & THT), PCB Fabrication, Electrolysis, Electroplating, Residential Electrical Wiring

Software & Languages : C, Verilog, HTML

CAD & EDA Tools : LTspice, Vivado, CCS (Code Composer Studio), Fusion360, SolidWorks

Test & Measurement : Oscilloscope, Multimeter, Spectrum Analyzer