

Brian S. McKinley

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EDUCATION

University of Central Florida

Bachelor of Science in Electrical Engineering with Honors | GPA: 3.60

Orlando, FL

Expected May 2027

Lake-Sumter State College

Associates of Arts in General Studies | GPA: 3.70

Lake-Sumter, FL

May 2023

Yu International Language and Cultural Academy

Study Abroad Summer Course Certification

Shin-Okubo, Tokyo, Japan

Aug 2023

EXPERIENCE

Tutor of Mathematics and Calculus

Lake-Sumter, 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.
- Fabricated 3-d topological models to enhance student understanding, enabling hands-on learning of abstract shapes and spaces.
- Created magnetic field dioramas 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 Town Council and Veterans/Memorial Day events, presenting the colors to foster civic 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 K-12 students electromagnetism basics at university-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 to complete projects on a strict timeline.

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