Daniel Pridgen

Electrical Engineering | LinkedIn | Engineering portfolio

Education

Mississippi State University Expected May 2028

B.S. in Electrical Engineering

Engineering Experience

Neural Engineering Lab, Mississippi State University Aug 2026–Present

Undergraduate Research Assistant · Dr. Sreenivasan Meyyappan

- Assist with noninvasive EEG sensor design and calibration. Develop Python and MATLAB scripts for biosignal filtering and interface sensors with embedded microcontrollers.
- Study stress and cognitive workload using eye tracking and physiological signals, including heart-rate variability and electrodermal activity.

Gulf Electric Co. Jun–Aug 2024

Union Electrical Apprentice · Mobile, AL

- Installed and terminated industrial heat tracing and helped adapt cable tray routes to field conditions.
- Used multimeters and circuit tracers to investigate voltage drops and wiring faults and reported readings to engineers.

Engineering Projects

OccuSense Smart Tourniquet Spring 2026

Project Manager & Hardware Integration Lead

- Integrated an Arduino Uno, force sensor, illuminated buttons, and LCD. Verified subsystem behavior in simulation and on a breadboard before moving to soldered perfboard.
- Placed first in Mississippi State’s Electrical Engineering Design Competition.

Neural Decoding for Simulated Robots Ongoing

- Developing a neural decoder for rest, left, and right commands from simulated neural activity, with planned integration into a MuJoCo locomotion policy.
- Plan to evaluate sensitivity to noise, electrode shifts, gain changes, and channel loss on held-out simulated data.

Wireless EEG Acquisition PCB In design

- Developed a hierarchical KiCad schematic and preliminary BOM for eight-channel ADS1299 acquisition with ESP32-C3 BLE transport.
- Defined a simulator-based bench plan for channel ordering, sample timing, signal quality, and wireless transport.

Technical Skills

Hardware and test: KiCad, PCB layout, oscilloscopes, multimeters, circuit tracers

Embedded and analysis: Arduino, ESP32, C/C++, Python, MATLAB, Verilog, Quartus, MuJoCo