Brayden O'Briant

Electrical and Computer Engineering

Southaven, MS | 901-827-3655 | braydenobriant@gmail.com

GitHub: https://github.com/PB-OBriant

Education

University of Memphis – Memphis, TN
Dual Bachelor's in Electrical & Computer Engineering
Expected Graduation: May 2026
Cumulative GPA: 3.82

Experience

Chick-Fil-A – BOH Operations Manager | Southaven, MS
April 2020 – Present
- Trained and onboarded 15+ new team members, enhancing operational efficiency.
- Maintained safety and cleanliness standards in a high-volume environment.
- Earned "Employee of the Month" three times for leadership and performance.

NREL – U.S. Department of Energy, SULI Intern | Golden, CO
Summer 2025
- Conducted transportation energy-efficiency research using RouteE and OpenPATH platforms.
- Analyzed trip-level fuel consumption and cost across multiple U.S. regions.
- Built Python-based data pipelines for large survey datasets and regression analysis.
- Authored a research paper and presented findings for DOE's SULI program.

Projects

NREL RouteE Energy & Fuel Cost Analysis (SULI Research)
- Conducted trip-level energy consumption and fuel cost analysis for light-duty vehicles across multiple U.S. regions using the RouteE modeling framework.
- Built Python data pipelines integrating RouteE, OSMnx, elevation raster tiles, and large household travel survey datasets.
- Implemented comparative fuel-cost methodologies including RouteE-reported energy, price-based calculations, and MPG-based estimates (combined, city, highway).
- Performed regression analysis with regional interaction terms to evaluate the impact of elevation, distance, and vehicle characteristics on energy consumption.
- Generated reproducible CSV outputs and summary statistics to support cross-regional validation and research reporting.

AI-Based Lesion Identification System (Senior Design Project – Team Lead)

- Led a multidisciplinary engineering team in the design of an AI-driven medical imaging system for automated lesion identification.
- Developed data sourcing and annotation workflows to curate a structured lesion image dataset with standardized metadata.
- Designed the end-to-end ML pipeline including preprocessing, model selection, and performance evaluation under real-world constraints.
- Addressed system-level considerations including dataset bias, false-positive risk, and HIPAA-aware data handling practices.
- Authored technical documentation and design artifacts aligned with formal engineering design and review processes.

Personal Portfolio Website (React)

- Built a navigable personal website using React to present engineering projects, resume, and contact information in a single platform.
- Implemented page navigation and layout structure to allow clear separation between projects, résumé content, and personal information.
- Designed user-friendly, interactive interfaces with an emphasis on clarity, usability, and professional presentation.
- Gained hands-on experience with component-based front-end development and client-side application structure.
- Used version control to iteratively develop and refine the site as new projects and features were added.

Technical Skills

Programming: Python, MATLAB, VHDL
Software: Microsoft Word & Excel Certified
Hardware: Circuit Design & Analysis, Embedded Systems Development
Collaboration Tools: Git, GitHub