

Garrett Bradham

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EDUCATION

University of Mississippi

Bachelor of Science in Computer Science

Oxford, MS

Aug. 2022 – May 2026

EXPERIENCE

Undergraduate Research Assistant

University of Mississippi

October 2024 – Present

Oxford, MS

- Developed an implantable wireless optogenetic device for use in laboratory mice
- Developed a machine learning model for classifying mouse vocalization spectrographs
- Program NRF SoCs to completely laboratory experiments

Information Technology (Classroom Technology)

University of Mississippi

Sep. 2023 – October 2023

Oxford, MS

- Communicate with managers to set up campus computers used on campus
- Assess and troubleshoot computer problems brought by students, faculty and staff
- Maintain upkeep of computers, classroom equipment, and 200 printers across campus

PROJECTS

Maimu | *SoC, BLE, C, Solidworks, Embedded Systems*

October 2024 – Present

- Implantable optogenetic device for circuit manipulation on mice
- Developed software in C for perfect LED blinking using PWM
- Designed clip mechanism for hot-swappable mouse implants
- Design and fabricate custom PCBs for Maimu
- Create custom battery cells for small form factor and optimal efficiency

Health Assessment Model | *Python, CNNs, Tensorflow, Signal Processing*

August 2025 – Present

- Understand the relationship of patient data and photoplethysmography signal with CVD and diabetes
- Create a custom CNN-Transformer hybrid model architecture
- Train model to deliver CVD and diabetes predictions on patients with over 85% accuracy
- Integrate model into mobile app for telehealth and preliminary screening solutions

DANGER RANGER - Threat Assessor | *WiFi, Arduino, C, Sensors*

April 2024

- Use sensors such as barometer, thermometer, and a button
- Allow sensors to communicate to a central hub over WiFi
- Develop an interface for real-time environment measurements
- Design a system to integrate all parts of project into a "wearable" solution for environmental threat assessment

CTRL-ALT-DEGREE | *APIs, Python, LLM, Instruction Finetuning*

April 2025

- Develop an AI Advisor for students completing a CS degree at Ole Miss
- Utilize API calls for a locally hosted DeepSeek model
- Use instruction finetuning to optimize the model with completion of it's tasks
- Provide realtime answers to course scheduling, conflicts and more in a typical LLM "Ask" interface

TECHNICAL SKILLS

Languages: Python, C/C++, HTML/CSS, QT

Developer Tools: Git, VS Code, Visual Studio, GitKraken, NRF Desktop, Segger Embedded Studio, SolidWorks, KiCAD, Figma, PrusaSlicer, AnyCubic

Libraries: pandas, NumPy, Matplotlib, tensorflow, PyTorch, cv2, scipy, scikit-learn