Katherine “Katie” Griffitts

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EDUCATION

Tulane University — New Orleans, LA
Bachelor of Science in Engineering — May 2027
Major: Biomedical Engineering (ABET Accredited), minor in English Literature

LEADERSHIP

- *President & Co-Founder* of the Tulane Prosthetics Club
- *Internal Vice President* of Tulane’s Society of Women Engineers
- *Vice President* of Unscripted Improv

RELEVANT EXPERIENCE

Scot Ackerman Makerspace — New Orleans, LA
Fabrication Technician — August 2024 - Present
- Train makers to safely use 5 fabrication areas: metalworking, woodworking, sewing machines, 3D printers, & laser cutters.
- Troubleshoot & maintain equipment like CNC mills, bandsaws, & belt sanders, and advise users on tools and fabrication methods.

Tulane Innovation Institute — New Orleans, LA
Biomedical Device Development Engineering Intern — June 2026 - September 2026
- Developed an EEG prototype headset to capture brain signals for motorized prosthetic arm control down to the individual finger
- Coordinated technical communication across medical and physics researchers and undergraduate students; earned approval to present the research at a biomedical engineering conference.

Hanger Clinic: Prosthetics and Orthotics — New Orleans, LA
Clinical Intern — February 2025 - December 2025
- Supported 20+ patient appointments & device fabrication, assisted clinicians, recorded measurements & helped with limb casting.
- Created 3D CAD models by scanning lower-leg casts, & gathered patients’ feedback on device fit, comfort, safety, and aesthetic.

TOM Global Prosthetic Devices - Sierra Leone Fabrication Support — Bo, Sierra Leone
Tulane Undergraduate Researcher — October 2024- March 2026
- Fabricated 6 prosthetic arms with components for 3 assistive-device designs, and then delivered, fitted, & adjusted each prostheses
- Worked with Njala University students to interview local amputees and clinicians to inform user-centered design.
- Interviewed community members and shadowed an amputee to identify daily needs and desired device functions.

SELECTED ENGINEERING PROJECTS

Buckle Up Baby (BUB) - Pregnancy Seatbelt & Crash-Test Model
Biomedical Engineering Capstone Design Project — September 2026-Present
- Serve as team captain for a year-long project, collaborating with the seat-belt design team to develop a pregnancy crash-test dummy.
- Research ways to measure crash forces on the fetus & placenta using an abdominal model that preserves realistic material properties.
- Investigate pregnancy-related factors affecting bone density to guide modeling of the hip, which bears substantial seat-belt impact.

Low-Cost EEG Signal Processing for Neuroprosthetic Control
Tulane Innovation Institute — September 2025-Present
- Designed & soldered 8 circuit boards incorporating hardware filters, 60 Hz notch filtering, signal amplification, and noise reduction
- Developing a 16-channel EEG platform for studying motor-intent decoding and future neuroprosthetic control.
- Applying spatial heat maps, channel-correlation analysis, & planned machine-learning classification to study hand-movement signals

SKILLS & INTERESTS

Tools: CNC Mill, Lathe, Water Jet, Resin & Filament 3D Printers, Laser Cutter, Glass Blowing, Metal & Wood Shop
Software: Fusion 360, Abacus CAE, Bambu Lab, KiCAD, Adobe Illustrator, MATLAB, Microsoft Office
Interests: Improv Comedy, Baking, Swimming, Mixed Media Sculpture, Stage Combat