KEVIN M. LARGENT

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SUMMARY

Electrical Engineer specializing in embedded systems and power electronics. Experienced in real-time stepper motor control, high-frequency simulation, and full-stack hardware development.

EDUCATION

University of Texas at Dallas *In progress*
PhD in Electrical Engineering - Power Electronics Focus
Overall GPA: 4.0

University of Texas at Dallas *August 2023*
B.S. in Electrical Engineering
Overall GPA: 3.65

EXPERIENCE

Onco Filtration May 2025 – Present
Embedded Systems Engineer *Dallas, TX*

- Developed Python-based control system for Watson-Marlow WM116DV peristaltic pump using Raspberry Pi Compute Module 4.
- Integrated pigpio-based GPIO control for direction, speed ramping, tachometer feedback, and fail-safe run/stop logic.
- Designed and debugged multithreaded control framework for precise RPM control with tachometer validation and transient logging.
- Created robust Python classes and scripts for pump automation, error handling, and real-time signal monitoring.
- Documented system milestones and developed test plans for validation in a medical fluidic environment.

University of Texas at Dallas Aug 2023 – Present
Graduate Research Assistant *Richardson, TX*

- Designed and simulated high-frequency inductor and transformer models using MATLAB and ANSYS Maxwell 3D.
- Investigated EMI, turn-to-turn capacitance, and core saturation phenomena in high-speed switching environments.
- Wrote a paper on sensor anomaly detection in DC-DC converters using Kalman filtering and SVM classification.

Onco Filtration (Internship) May 2023 – Aug 2023
Electrical Engineering Intern *Dallas, TX*

- Designed multi-layer PCB for cancer screening device using Altium Designer.
- Designed and implemented GUI for printing labels to track customer samples through filtration process.
- Created disposable tubing sets for blood testing

TECHNICAL STRENGTHS

Languages	Python, C/C++, MATLAB, Bash, LaTeX
Embedded Systems	Raspberry Pi (CM4), pigpio, GPIO, PWM, tachometer interfacing
Power Electronics	SRM drives, inductor modeling, GaN/SiC devices
Simulation Tools	PLECS, ANSYS Maxwell, MATLAB/Simulink, LTSpice
Hardware Design	PCB layout (Altium), oscilloscope/debug tools
Version Control	Git, GitHub

RELEVANT COURSEWORK

Graduate Power Electronics
General Theory of Electric Machines
Control Modeling and Simulation of Power Electronics
Analog Circuit Design
Graduate Embedded Systems
Dynamic of Complex Networks and Systems