Greyson Ekstrom

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EDUCATION

University of Georgia Expected: May 2029
Bachelor's of Science in Electrical & Electronics Engineering GPA: 3.84/4.00
Relevant Coursework: Circuit Analysis, Digital Logic Design, Intro to ECSE, Experiential Data Science Specialization

LEADERSHIP & INVOLVEMENT

Formula SAE EV Powertrain Controls Lead, UGA Motorsports Aug. 2026 - Present

- Appointed as the founding controls team lead after rapid organizational growth resulted in powertrain team restructuring
- Leading a team of 10 undergraduates within a 70 member, 4 subteam organization to develop UGA's inaugural Formula SAE EV vehicle, registered to debut and compete summer of 2027 at Formula SAE Michigan, an international competition
- Orchestrated the integration of vehicle sensors, steering control, and cooling systems into formula style electric vehicle, selecting and validating components to meet Formula SAE EV competition regulations

Formula SAE EV Electronics Engineer, UGA Motorsports Sep. 2025 - Aug. 2026

- Collaborated among mechanical and electrical teams to develop a printed circuit board using Altium Designer, fulfilling mechanical integration requirements and competition design regulations
- Engineered low voltage sensor processing circuitry using Altium Designer utilizing RC filtering to reduce noise from analog sensor outputs resulting in cleaner system readings
- Simulated varying circuit inputs utilizing LTspice ensuring functioning schematic design and optimizing component selection reducing net power consumption

IEEE Hardware Competition Electrical Team, UGA Robotics Aug. 2026 - Present

- Co-designed electrical system for an autonomous robot with an 8-person team, utilizing system schematic design, cost vs points analysis, and competition strategy ultimately optimizing design for an anticipated 40 second game completion
- Integrating motors, encoders, motor drivers, odometer, servos, TOF sensor network, and IR sensor network; managed I2C and CSI robot serial compatibility creating an electronically compatible sensor network for mechanical and software integration

RoboDawg Electrical Team, UGA Robotics Aug. 2025 - Aug. 2026

- Implemented software and electrical communication between motor controllers and onboard Jetson Nano using Linux
- Set up, tested, and troubleshot persistent software errors and faulty hardware systems during initialization

Software Lead, Flying Legion FIRST Robotics Aug. 2023 - May 2025

- Led a team of 8 students to design and optimize Java robotic control software and autonomous operation delivering the system within a 6-week deadline and increasing scoring speeds by 60% from season start and qualifying for district competition
- Implemented subsystem control software communicating with brushless motors, encoder feedback loops, PID controls, and servos using Git multibranch workflow to streamline integration and improve subsystem functionality

PROJECTS

Robotic Arm Dec. 2025 - Present

- Integrated Python OpenCV vision processing model on Raspberry Pi, autonomously manages inverse kinematic motor controls
- Building 4-axis robotic arm controller on Arduino with CNC shield, using AccelStepper to drive stepper motors

Voltage Indicator Sep. 2026 - Present

- Designed a high-voltage detection circuit in Altium Designer for the Formula SAE EV tractive system, integrating a wide range buck converter and comparator to detect voltages above 60 VDC; completed PCB layout and prepared design for fabrication
- Simulated circuit performance in LTspice across a 19–400 VDC input range, evaluating 12 V rail stability and detection behavior

Brake System Plausibility Device Sep. 2025 - Aug. 2026

- Developed a printed circuit board (PCB) for Formula SAE EV vehicle, triggers vehicle shutdown within 450 ms when braking and tractive-system current occur simultaneously, in accordance with Formula SAE requirements
- Simulated optimized component selection using LTspice and Altium Designer, reducing simulated switching time by 20%

SKILLS

Design & Simulation: Altium Designer, KiCad, LTspice, Multisim, SPICE
Laboratory Equipment: Oscilloscope, Digital Multimeter, DC Power Supply, Soldering Iron
Hardware: Arduino, Raspberry Pi, Jetson Nano, Servo, Stepper Motor, Motor Driver, Encoders, Odometer, TOF array, IR array
Programming: C++, Python, MATLAB, Java