

Junior Fonkam

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EDUCATION

Rowan University, Glassboro, NJ | Anticipated May 2028
Bachelor of Science, Electrical and Computer Engineering
Minor: Business Administration, Rohrer College of Business (AACSB Accredited)
GPA: 3.4 | Dean's List (2023–2026)

TECHNICAL PROJECTS

- **Gas Control Valve | PCB Design · Embedded C · Control Systems | 2026**
 - Designed and built a motorized gas control valve system end-to-end, from schematic to finished PCB using Altium Designer
 - Hand-soldered the fabricated board and wrote embedded C firmware in Code Composer Studio to drive a bidirectional motor, read limit-switch feedback, and regulate valve position via closed-loop control
- **Automated Mud Pump Control | Industrial Automation · AutoCAD Electrical | 2026**
 - Developed a full control panel for automating mud pump operations in a drilling context
 - Drew wiring diagrams and panel layouts in AutoCAD Electrical, built the physical enclosure, and wired and commissioned WAGO I/O modules
- **Vibration Analysis — Bearing Failure | Signal Processing · FFT · Grafana | 2026**
 - Investigated whether vibration sensors alone could detect bearing failures in pipe rollers
 - Monitored raw data to identify changes in frequency amplitude and applied FFT to shift analysis into the frequency domain, making fault patterns clearly visible
- **SAP-1 Computer | Digital Logic · Hardware Design | 2025**
 - Constructed a fully functional 8-bit SAP-1 computer using discrete TTL logic ICs on breadboards with no microcontroller
 - Built and tested all subsystems independently: program counter, ALU, instruction register, accumulator, and output register
- **Self-Driving Robot Car | Robotics · Arduino · C++ | 2025**
 - Built an autonomous ground vehicle from scratch, assembling the chassis, motors, and sensors by hand
 - Programmed obstacle detection and avoidance in C++ using infrared and ultrasonic sensors with real-time course correction
- **Ultrasonic Distance Sensor | Arduino · C++ · Embedded | 2025**
 - Programmed an HC-SR04 ultrasonic sensor to measure distance in real time, converting echo return time to centimetres
 - Displayed output on a 16×2 LCD and streamed data over serial for live plotting
- **Simon Says Game | Embedded C · Arduino | 2025**
 - Implemented Simon Says on a microcontroller with four LEDs, buttons, and a piezo buzzer for audio feedback
 - Persisted high scores to EEPROM across power cycles

SKILLS

- **Technical Skills:** C/C++, Embedded C, Arduino, Verilog, Altium Designer, AutoCAD Electrical, MATLAB, Code Composer Studio, PCB Design, FFT/Signal Processing, WAGO I/O, Soldering, 3D Printing
- **Soft Skills:** Problem-Solving, Time Management, Adaptability, Technical Communication, People Oriented

WORK EXPERIENCE

Electrical Engineering Intern

May 2026 – August 2026

Michels Corporation

- Designed and built a full control panel for automating mud pump operations in a drilling context, including wiring diagrams and panel layouts in AutoCAD Electrical and commissioning WAGO I/O modules
- Investigated whether vibration sensors could detect bearing failures in pipe rollers by monitoring raw data for changes in frequency amplitude and applying Fast Fourier Transform analysis to identify fault patterns
- Wrote operational rules and logic for drill rig training models used in operator instruction

Resource Center Technician

September 2025 – Current

IEEE Resource center

- Assisting Professors, Students, and Coworkers with task
- Testing & Repairing Equipments, Soldering, 3D Printing, Manufacturing
- Cultivating a safe workflow by communicating necessary information within the team

ACTIVITIES & VOLUNTEER EXPERIENCE

IEEE (Institute of Electrical and Electronics Engineers) — Rowan University Chapter

National Society of Black Engineers (NSBE) — Rowan University Chapter

African Student Association (ASA), Rowan University — Community Service Chair