Johnathan Uptegraph

Robotics Engineer | Systems Developer | Mechatronics Specialist
jwuptegraph@gmail.com | (614) 632-4927 | juptegraph.dev | github.com/J-Uptegraph | LinkedIn

Summary:

I see robotics as both a science and an art—where rigorous engineering meets creative problem-solving. I think like an engineer and implement like a designer, building systems that perform under pressure and scale with purpose. With over 2 years of experience in the robotic automation industry deploying 50+ robots across $25M+ installations in the automotive, medical, and defense industries, I specialize in custom solutions that launch fast, scale efficiently, and adapt to real-world constraints. From full-cell deployments to embedded prototypes powered by Raspberry Pi, ESP32, and Arduino—I bridge concept to execution. I've optimized robot paths under high-stakes deadlines, reverse-engineered undocumented PLC logic, and delivered solutions to keep clients operational while enabling long-term solutions. Beyond the floor, I've prototyped assistive technologies for patients with cerebral palsy—developing sensor-driven, user-friendly systems in collaboration with university research teams. In my spare time, I've been deepening my understanding of ROS 2 and Gazebo to prepare for a focused transition into simulation-based autonomy. I'm driven to solve real-world problems through robotics—and build systems that leave a lasting impact.

Core Competencies:

- **Robot Platforms & Tools:** KUKA, ABB, Fanuc, Yaskawa, RoboGuide, KRL, ROS 2
- **Embedded & IoT Systems:** ESP32, Raspberry Pi, IMUs Arduino, IMUs, Ethernet/IP
- **Programming Languages:** Python, Java, C#, C++, JavaScript
- **Frameworks & Operating Systems:** React.js, Angular.js, Linux, Git
- **Robot Motion & Path Control:** Joint/Cartesian Tuning, Multi-Robot Handshaking, Safety IO
- **Human-Robot Interaction:** HMI Design, Adaptive Interfaces, Sensor Fusion, Robotic Vision
- **CAD & Fabrication:** Fusion 360, 3D Printing, Rapid Prototyping, Soldering
- **Simulation & Animation:** RobotStudio, Unity, Unreal Engine, Blender, Maya, Gazebo

Professional Experience:

Robotic & Controls Engineer | KC Robotics
May 2023 - Current

- **Major EV Automotive Manufacturer – Material Handling & Grinding:** $20M+ install of 25+ KUKA robots. Refined robot motion paths and PLC logic to reduce tool wear by 20%.
- **Medical Device Manufacturer – Welding & Handling:** 2 KUKA robots with 9+ custom EOATs for MRI machine welding. Re-designed PLC logic and integrated active cell monitoring via Modbus.
- **Automate 2025 Demo Cell - Pick & Place:** Programmed a robotic demo (ABB, KUKA, Fanuc) with handshaking logic for dynamic material handling of colored objects to form image patterns.
- **Defense Contractor (In Progress) - Material Inspection:** Integrating 15+ Fanuc robots for part inspection and handling. Optimizing RoboGuide paths, safety IO, and Rockwell Studio 5000 logic.

Johnathan Uptegraph

Robotics Engineer | Systems Developer | Mechatronics Specialist
jwuptegraph@gmail.com | (614) 632-4927 | juptegraph.dev | github.com/J-Uptegraph | LinkedIn

Academic Experience & Leadership:

Miami University Machine Learning Research Assistant
August 2022 – October 2022

- Developed and implemented linguistic prediction models utilizing Python and the Pandas.
- Contributed to research findings ***acknowledged in Social Network Analysis and Mining*** journal.

Miami University Robotics, Web, and Mobile App Development Teaching Assistant
August 2022 – December 2022

- TA for Human-Robot Interaction, Advanced iOS Mobile App Dev, and Advanced Web Dev.
- Led 70+ students in coursework, labs, SIs, and project reviews with a 97% course-wide pass rate.

Lead Robotics Researcher – Assistive Drinking Device
January 2021 – August 2022

- Prototyped an adaptive robotic drinking device tailored for individuals with Cerebral Palsy, integrating 3D-printed housing, food grade safe components, IMU sensor fusion with intelligent control algorithms powered by Raspberry Pi and Arduino.

Personal Projects:

- **ROS 2 + Gazebo Simulator (In Development):** Robot simulation in Gazebo using ROS 2. Integrating IMU and LiDAR data via extended Kalman filtering for real-time state estimation.
- **Smart Home Garage Door Switch:** Engineered an ESP32-based smart garage door controller with seamless Apple HomeKit integration, featuring a custom-designed and 3D-printed enclosure and incorporating Arduino for precise sensor input management.
- **3D Printing Mobile App:** Developed a user-friendly Swift mobile application leveraging the OctoPrint API and a jQuery backend for comprehensive remote control and monitoring.

Educational Background:

- **Bachelors in Emerging Technology – Miami University**
  - Minors: Computer Science & Simulations
  - 4x Miami University Dean's List Recipient
  - Recipient of Department's Academic Excellence Award

Certifications:

- FANUC Handling Tool Operations & Programming (2024)
- EPLAN Electric P8 (2024)