Max Kotas

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Education

Bachelor of Science in Electrical Engineering (Minor in Mathematics) Texas A&M University
Graduation Date: December 2024
Relevant Coursework: Digital System Design, Circuit Theory, Signals & Systems, Random Signals & Systems, Electronics, Computer Architecture & Design, Electric Energy Conversion, Security of Embedded Systems, Electronic Motor Drive, DSP-Based Motion Control, Microwave Circuits & Systems, Operational Amplifiers, Communications & Cryptography

PISD Academy High School STEM-Based Project-Based Learning School
Focused on hands-on learning in science, technology, engineering, and mathematics (STEM).

Technical Skills

Core Skills: Embedded Systems, Control Systems, Circuit Design, RF Design, Motor Control, Filter design, digital signal analysis (MATLAB, Python), PID controllers, robotics platforms, Oscilloscopes, logic/spectrum analyzers, Hardware-in-the-Loop (HIL)
Programming: C/C++, Python, JavaScript, Assembly, Verilog
Tools: Altium Designer, KiCad, Arduino, ESP32, Node.js, MongoDB
Platforms: Raspberry Pi, Xilinx ISE, Wireshark, Git/GitHub

Notable Projects

For more details about these and other projects, visit my portfolio at **maxkotas.com**.

BLDC Motor Control System Design 2024
Skills: Embedded Systems, Control Systems, DSP, Power Electronics
- Designed BLDC motor control using six-step voltage modulation and Hall-effect sensor feedback.
- Implemented PI control for stable speed regulation and demonstrated smooth direction reversal.
- Explored future enhancements like sensorless and FOC control for robotics applications.

IoT-Enabled Beverage Dispensing System 2024 – Present
Skills: IoT Systems, Automation, PCB Design, Motion Control
- Built MQTT-controlled beverage dispenser with a custom PCB integrating ESP32 and motor drivers.
- Designed stepper motor-driven linear motion system and 3D-printed components for liquid dispensing.
- Demonstrated practical automation skills with applications in smart systems.

ESP32-Controlled Flamethrower 2024
Skills: Wireless Communication, Mechatronics, Safety Engineering
- Created Bluetooth-controlled flamethrower with ESP32 and PS4 controller for precision operation.
- Integrated servo-controlled gas valve, spark ignition, and aluminum housing for safety.
- Emphasized fail-safe mechanisms, aligning with defense standards.

Professional Interests

Automation, Robotics, Control Systems, Embedded Systems, Power Electronics

Community Engagement

Volunteer, Bryan Food Bank 2024 – Present
- Assist in sorting, packing, and distributing food to underserved community members.
- Collaborate with staff and other volunteers to organize donation drives and ensure smooth operations.
- Develop communication and teamwork skills while giving back to the local community.

Personal Interests

International Travel, Hiking & National Parks, Music (Guitar)