Andrew Zoghby

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🎓 Education

May 2022   **University of Illinois Urbana-Champaign** *BS in Computer Engineering.*
GPA: **3.88** / 4.0 | College of Engineering Dean's List Every Semester

💼 Work Experience

College of Veterinary Medicine, *Digital Signal Processing Research Assistant*   Aug 2020 - Current
- Implement digital signal processing algorithms in C++ using Android JNI.
- Design an encoding scheme to pass multi-channel ECG data over wireless TCP.
- Add real time ECG data monitoring to Android mobile app.

Caterpillar, *Software Engineering Intern*   May 2020 - Current
- Recruited for new position within Caterpillar.
- Assigned a new application to develop display software from scratch.
- Programmed new engine display features using Java and HTML.
- Designed an emulation platform to provide analytic data to legacy hardware.

Caterpillar, *Control Systems Engineering Intern*   May 2019 - May 2020
- Caterpillar extended the position through the academic year for me.
- Analyzed embedded systems memory chip failures to assess future risk and minimize it.
- Designed service routines to locate hard to detect, mechanical faults on engines.
- Integrated new requirements into existing control system specifications.
- Implemented control system specifications with Matlab Simulink.
- Built and launched a collaborative database allowing engineers to reuse past calibrations and distribute new features to all relevant engines.
- Developed software tools to simplify interactions with the requirements database.
- Performed hardware in the loop (HIL) testing on pre-release software.

First Tech Challenge Robotics Team, *Captain and Lead Programmer*   Aug 2015, May 2018
- Led team to two consecutive placements at the First World Championship.
- Planned and ran events at elementary schools about STEM education.
- Analyzed camera images using OpenCV.

🧍 Skills

C, C++, x86 ASM, Java, Python, Matlab Simulink, Visual Basic, HTML, LaTeX
git, Android Development, Linux System Development, Microsoft Excel, Circuit Analysis, Control Theory

📖 Relevant Courses

ECE 391 Computer Systems Engineering, ECE 486 Control Systems, CS 374 Algorithms and Models of Computation, ECE 313 Probability in Engineering, CS 225 Data Structures, ECE 210 Analog Signals and Systems

🏆 Awards

UIUC College of Engineering Dean's List, HackIllinois Unanimous Grand Prize Winner, Uncommon Hacks First Place IOT Prize Winner, Eagle Scout, FIRST Robotics Dean's List Semi-Finalist