Andrew Zoghby

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Education

May 2022 **University of Illinois Urbana-Champaign** *BS in Computer Engineering, Minor in Statistics.*
GPA: **3.87** / 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.

Caterpillar, *Software Engineering Intern* May 2020 - November 2020

- Recruited for new position within Caterpillar.
- Worked within a new product introduction team to support product launches.
- 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

- 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.
- Performed hardware in the loop (HIL) validation on pre-release software.

Projects

Monocular Visual Odometry Control System

- Read and understood state of the art Visual Odemetry algorithms from published papers.
- Implemented start of the art algorithms in Python using OpenCV.
- Designed custom control system to track the absolute position of the drone.

Operating System

- Designed OS and Kernel from scratch in C, using Intel x86 documentation.
- Provided multitasking capabilities on a single core system.
- Implemented memory management techniques such as paging.
- Created interrupt based drivers for 3rd party devices from documentation.

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