Tyler Faye

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Engineering Experience

INTEGRATION ENGINEERING INTERNSHIP – MEDTRONIC (SPRING AND SUMMER 2019)

- Worked towards integrating machine learning algorithms into FPGA hardware
- Utilized cutting edge tools from Xilinx to assist with creation of hardware descriptor language code
- Built upon common computer vision algorithms to start a solution for labeling video in real time

SENIOR DESIGN PROJECT – LOCKHEED MARTIN PARTNERSHIP (FALL 2018 – SPRING 2019)

- Worked as a member in one of two interdisciplinary teams to design and build a rocket powered glider capable of providing rapid aerial reconnaissance
- Designed and implemented a control system capable of autonomous flight and guidance to specified GPS coordinates
- Assisted with software for target detection and classification using saliency detection and machine learning

ELECTRICAL ENGINEERING INTERNSHIP – TERUMO BCT (SUMMER 2018)

- Designed and built a data logger to interface with existing devices, obtain relevant sensor values by communicating with an ADC via SPI, and output the formatted data over RS232
- Created an algorithm from the Beer-Lambert law to relate the optical attenuation of a laser or LED through a set of multiple mediums to the proportion of a specific component present within the mediums
- Worked independently in a BSL-2 laboratory to gather data and confirm the algorithm I created was accurate

ELECTRICAL ENGINEERING INTERNSHIP – MEDTRONIC (SUMMER AND FALL 2017)

- Designed and built a test environment capable of emulating the conditions within the abdomen
- Programmed two Arduino boards to work in tandem to automatically regulate the conditions within the test chamber based on sensor feedback and user-controlled set points
- Researched different operations within the abdomen and challenges surgeons face during laparoscopic surgery

Specialized Skills

DESIGN AND MODELING

- Experienced in Solidworks, including individual part design and assembly creation (past work available)
- Familiar with the use of Multisim to design and simulate circuits before implementation

PROGRAMMING

- Experienced in Assembly, C, C++, Python, and HTML programming languages
- Practiced in the use of both Wolfram Mathematica and Matlab
- Capable of writing and integrating code for hardware applications, such as embedded systems or FPGAs

MACHINING, FABRICATION, AND TESTING

- Trained in the use of manual lathes, manual mills, CNC lathes, CNC Mills, 3D printers, laser cutters, belt sanders, and other common shop tools
- Trained in the use of lab equipment such as oscilloscopes, multimeters, power supplies, and function generators
- Adept at soldering wires and components all the way down to a 20 thousandth pin pitch DFN package device

Education

UNIVERSITY OF COLORADO – DECEMBER 2019 EXPECTED GRADUATION

BS in Electrical and Computer Engineering, 3.129 Overall GPA