Jack Doan
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Summary: Computer Engineer with leadership experience and academic training at the University of Texas at Dallas. Proven skills in circuit design, research, and system integration, with a strong background in both embedded systems and robotics. Excited about solving problems and learning new things in the process.

Education: The University of Texas at Dallas, B.S. Computer Engineering May 2018
Coursework: Real Time Operating Systems, Computer Architecture, Signals & Systems

Engineering Projects and Experience:

Software Engineer II at Collins Aerospace February 2018 - Current

- Mission Software Systems - NAVAIR E6-B Mercury
  - Maintained mission-critical message-processing and radio-control software for NAVAIR
  - Brought a 15 year old software project into compliance with modern cybersecurty best-practices
  - Led the effort to split a legacy monolithic Java application into highly available microservices
  - Reduced my team's delivery process from 1 week to 2 hours, saving us more than 6 weeks per year
- Mission Software Systems - Common VLF Receiver (CVRi)
  - Developed secure crypto-key management systems with Wind River Linux and Keil CMSIS-RTOS
  - Decreased system startup time by 50% by threading GPS synchronization process
  - Debugged and resolved real-time Ethernet communication issues with legacy hardware
  - Collaborated with hardware team to port reference drivers to our hardware

Senior Design Project: Air-Hockey Robot for Sci-Tech Discovery Center August 2017 - May 2018

- Designed and built an air-hockey-playing robot for a local science museum to get kids excited about STEM
- Computer vision system tracks the puck's location in real time and estimates its trajectory
- Control inputs and strategy decisions are visualized to show guests how the robot thinks
- High-performance actuator moves to protect the robot's goal, intercept the puck, and take shots
- As team leader, directed a team of six students, coordinated with stakeholders, and managed deliverables

Student Researcher at the Locomotor Control Systems Laboratory April 2015 - January 2018

- Control Strategy Implementation:
  - Worked with PhD candidates to prototype cutting-edge research devices
  - Transformed scientific literature into precise, testable software requirements
  - Used Agile methodologies to develop software quickly, while ensuring the user's needs were met
  - Documented code to allow non-programmers to understand and tweak it
  - Successfully tripled system performance by overhauling legacy code to meet modern standards
- Powered Lower-Limb Exoskeleton:
  - Designed and built the electrical subsystems that facilitate locomotor rehabilitation of stroke patients
  - Wrote software to track the user's gait cycle and apply the up to 40% body weight support
  - Implemented control laws, wrote device drivers, and designed printed circuit boards

Publications:

- **J. Doan**, J. Rawlins, 'TP-Link Archer C5: Authenticated remote code execution through malicious configuration file upload' *CVE-2018-19537*, 2018
- T. Elery, S. Rezazadeh, C. Nesler, **J. Doan**, H. Zhu, R. Gregg, 'Design and validation of a powered knee-ankle prosthesis with high-torque, low-impedance actuators' *IEEE Int. Conf. Robotics and Automation*, 2018.
- H. Zhu, **J. Doan**, C. Stence, G. Lv, T. Elery, R. Gregg, 'Design and validation of a torque dense, highly backdrivable powered knee-ankle orthosis' *IEEE Int. Conf. Robotics and Automation*, 2017.

Technical Skills	C/C++	Java	Python	Verilog	Combat Robotics	Embedded Systems
	KiCAD	Altium	LabVIEW	MATLAB	PCB Design	SMD Soldering
	Linux	Git	RTOS	DSP	Motor Control	Power Electronics
	ARM	AVR	MSP430	C2000	Serial Communication	Use of Test Equipment

Availability: US Citizen, with security clearance. Prefer to remain in the DFW area.