MITCHELL D. JOHNSON

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WORK EXPERIENCE

Boeing Defense, Space and Security – *Software Engineer;* Tukwila, WA — June 2020 – Present
- Halved product regression test time by developing an automated hardware test framework in Python
- Adapted legacy embedded C flight software to meet export control requirements
- Completed several bug fixes and maintainability improvements on in-house C# hardware test applications
- Became familiar with the design and architecture of high-performance airborne RF processing systems

Boeing Research and Technology – *Manufacturing Automation Engineer;* Everett, WA — May 2018 – June 2020
- Responsible for day-to-day support and long-term improvement projects in a robotic manufacturing environment
- Developed Web interface for product verification tracking using robot telemetry data (Cloud Foundry, Python, Django)
- Prototyped algorithm and implemented GUI for computer vision system to detect drill bit damage (C++, OpenCV, MFC)
- Directed team of UW faculty and graduate students in data science project to identify and predict premature drill bit failures
- Operated industrial robots and collected and analyzed quality data during drill process development testing
- Collaborated across disciplines to solve production issues without supervision during startup of 777X wing assembly line

US House Committee on Science, Space and Technology – *Staff Intern;* Washington, D.C. — January 2018 – April 2018
- Developed skills for research and technology advocacy within both the public and private sectors

ExxonMobil – *Fixed Equipment Co-op (2 terms);* Baytown, TX — January 2015 – May 2015, May 2016 – August 2016
- Worked with vendor to design and accelerate manufacturing of $1.2M in safety-critical specialty heat exchangers
- Completed 15+ piping repair packages in compliance with company and industry design specifications
- Learned to effectively navigate complex engineering organization and excel under challenging workload

EDUCATION

University of Washington — Master of Science in Electrical and Computer Engineering — December 2020
Coursework: Machine Learning, Deep Learning, Mobile Robotics, Computer Vision, Embedded and Real-Time Systems, Intro to MEMS, Digital Signal Processing, Linear Systems Theory, Data Structures and Algorithms — *GPA: 3.85*

University of Texas at Austin — Bachelor of Science in Mechanical Engineering with High Honors — May 2018
Engineering Honors Program; Minor in Business — *Overall GPA: 3.92*

University of Texas System — Bill Archer Fellowship Program — Spring 2018
Washington, D.C., internship and academic fellowship program

ACADEMIC PROJECTS

ROSberry Pi Drone (UW) – Self-built drone controlled by Raspberry Pi communicating with Arduino slave over USB. Xbox controller interface for control inputs to RPi through Bluetooth (C, C++, Python, ROS)

Inverted Pendulum Control (UW) – Simulink control design for Arduino microcontroller on mini-Segway robot. Implemented LQR controller with complimentary filter for IMU sensor fusion (MATLAB, Simulink)

Autonomous RC Car (UW) – ROS package for waypoint following with path planning (A*), localization (particle filter) and path following (PID) capability (Python, ROS, Numpy)

Automated Pipe Viscometer Design Study (UT) – Team lead for senior design project. Conducted Monte Carlo simulation to size piping, determine sensor error budgets and estimate system measurement repeatability (MATLAB)

RESEARCH EXPERIENCE

RAPID Drilling Research Consortium – *Undergraduate Research Assistant;* Austin, TX — February 2016 – April 2018
- Published Undergraduate Honors Thesis and three conference papers on automation of drilling fluid rheology testing
- Modified laboratory flow loop and conducted extensive experimental investigation into temperature effects on fluid viscosity

LEADERSHIP EXPERIENCE & ACADEMIC ACTIVITIES

UT Austin ME Undergraduate Advisory Board – *Founder* — Spring 2016 – Fall 2017
- Led the creation of an official liaison group between ME students, faculty, and staff
- Advocated successfully for new integrated ME BS/MS program as member of ME Curriculum Committee

Delta Tau Delta Fraternity – *Scholastic Chair (2015), Alumni Relations Chair (2016)* — Spring 2014 – Fall 2017

HONORS & AWARDS

- 1st Place, UT Undergraduate Research Showdown, 2017
- UT Undergraduate Research Fellowship, 2016
- UT Unrestricted Endowed Presidential Scholarship, 2017
- Society of Manufacturing Engineers Scholarship, 2014-2016