Riley Kenyon

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EDUCATION

M.S. Mechanical Engineering, University of Colorado Boulder May 2020
GPA: 3.95/4.0

B.S. Mechanical Engineering, University of Colorado Boulder May 2020
GPA: 3.85/4.0

Honors/Awards: Engineering Dean's List, Engineering Differential Scholarship, Chevron Scholarship
Certificates: Certified SolidWorks Associate, NVIDIA Fundamentals of Accelerated Computing with CUDA C/C++

ENGINEERING EXPERIENCE

Siemens Gamesa Renewable Energy, Engineering Project Support - *Blade Inspection Camera* May 2019 – Present

- Improved blade imaging accuracy using OpenCV to classify blade area center with HSV histogram peak detection
- Created command line interface to initiate inspection, debug log, image archive, and create spatial metadata
- Designed linear actuator door mechanism for integration with existing aluminum extrusion hardware enclosure
- Enhanced the concept of operation and created business case to market viability of remote inspection method

Electro-Mechanical Products, Manufacturing Intern - *Coherent Pressure Test Unit* May 2018 – Aug 2018

- Redesigned and fabricated a new pressure drop machine for determining faulty parts with clogged tubing
- Collected restricted cross-section pressure data to compare experimental curve against a Bernoulli derived model
- Implemented solenoid valves to automate wash, rinse, and dry cycle actuation using MOSFETs
- Amplified signal from differential pressure transducer and thermocouple probe to be read by microcontroller
- Programmed microcontroller using *Arduino IDE* to display outputs, open valves, toggle relays, and read signals

RELEVANT PROJECTS

Animal Care Systems, Senior Design Project (Test Engineer) - *Mechanized Cage Monitoring Kit* Aug 2018 – May 2019

- Designed a remotely accessible live video mice monitoring system for overnight viewing of laboratory setting
- Automated smooth rotation of carousel with stepper motor micro-stepping and rotational tracking via encoder
- Created GUI for remote control of motor and IR cameras utilizing an Apache server hosted on Raspberry Pi
- Developed and executed test procedures to verify vibration, noise, and light requirements for animal comfort

Independent Study, University of Colorado Boulder - *Optimized Game Automation with GPU* Jan 2019 – May 2019

- Automated push-pull solenoid actuation based on visual servoing to emulate playing mobile game "Piano Tiles"
- Utilized accelerated parallel processing on GPU with CUDA C/C++ to process video from MIPI camera
- Designed computer vision algorithm to detect tile position on phone screen and estimate tile velocity
- Increased computational efficiency such that the automated system exceeds the average human response time
- Documented procedures and learning objectives for the NVIDIA Jetson TX2 and Jetson Nano with *LaTeX* reports

RELEVANT COURSEWORK

Industrial Automation Jan 2019 – May 2019

- Developed fundamental understanding of real-time input output with *LabVIEW* on the NI myRIO
- Designed and tuned PID feedback controllers to improve system performance of an RRC circuit
- Utilized Nyquist plots, root locus, Bode plots, and frequency response functions to understand system behavior
- Demonstrated the effects of discrete sampling on control system stability and signal reconstruction

LEADERSHIP

Teaching Assistant, System Dynamics Jan 2019 – May 2019

- Provided guidance and troubleshooting assistance when using oscilloscopes, *MATLAB,* and *Simulink*
- Assisted students in their understanding of system identification, feedback loops, characteristic equations, and performance metrics through laboratory-based learning

SOFTWARE/TECHNICAL SKILLS

- Proficient with *C, CUDA, LabVIEW, LaTeX, MATLAB, Microsoft Office, OpenCV, Python, Simulink, SolidWorks*
- Experience with *Bash, DraftSight, EES, Fusion360, HTML, JavaScript(jQuery,AJAX), PHP*