

# Riley Kenyon

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## EDUCATION

**BS/MS 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:** 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 performance of blade inspection camera using OpenCV to classify blade tips with histogram peak detection in the HSV color space to track area center by visual servoing
- Created command line interface to initiate inspection processes with a variety of parameters including debug log, image archiving, and creating metadata spreadsheet for post-processing
- 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 experimental data related to pressure differences and compared it to 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-feed mice monitoring system for overnight viewing of laboratory setting
- Implemented animal comfort standards for vibration, noise, and light emitting components
- 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 operational requirements and satisfy design specifications

**Independent Study** – *Optimized Game Automation with GPU* Jan 2019 – May 2019

- Automated solenoid actuation to register pressure on touchscreen for the mobile game “Piano Tiles”
- Utilized accelerated parallel processing on GPU with CUDA to process video frames
- Applied computer vision feedback to a physical output, exceeding average human response time
- Documented procedures and learning objectives for the NVIDIA TX2 with *LaTeX* reports

## RELEVANT COURSEWORK

**Industrial Automation**

Jan 2019 – May 2019

- Learned the fundamentals of real-time input output with *LabVIEW* on the NI myRIO
- Used feedback control and proportional gain controllers to improve system performance of RRC circuit
- Utilized nyquist plots, root locus, bode plots, and frequency response functions to understand system performance
- 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*