KYLE H. CHEUNG

Department of Biological and Agricultural Engineering
University of California, Davis
Davis, CA 95616

kyhcheung@ucdavis.edu
kylehcheung.com

EDUCATION

Expected June 2020	M.S. in Biological Systems Engineering *University of California, Davis*
June 2018	B.S. in Biological Systems Engineering *University of California, Davis* Biotechnology emphasis

RESEARCH EMPLOYMENT

Sep 2018 – Present

Graduate Student Researcher
PI: Alireza Pourreza, Cooperative Extension Specialist
Department of Biological and Agricultural Engineering
University of California, Davis

- Drought Injury Detection in Turfgrass with Aerial Multispectral Images (Python, XGBoost, pandas, ArcGIS)
    - Develop pre-processing and machine learning pipeline for drought injury classification in turfgrass with multispectral images
    - Compare multispectral classification performance with RGB images to understand detection performance gain using all spectral bands
    - Received Student Oral Presentation Award at ASABE International Meeting 2019
- Photogrammetric Orchard Canopy Profile Mapping (Python, MATLAB, OpenCV, geopandas, rasterio, QGIS)
    - Create an assisted, automated program to process aerial photogrammetry point cloud data for orchards, returning segmented tree shapes and geometry features
- Plan and conduct small unmanned aerial vehicle flights for LiDAR and hyperspectral image collection in orchards
- Write and present GIS tutorials for undergraduate students covering concepts in raster calculations, shape overlays, data management

July 2018 – Present

Staff Research Associate
PI: Jeremy James, Director
Sierra Foothill Research and Extension Center
University of California, Dept. of Agriculture and Natural Resources

- Design a rack-and-pinion style, electric drive train and rail carriage system for an automated rainout shelter moving along a slope with Solidworks
- Plan and implement primary/secondary PLC network to control safe deployment of rainout shelters during precipitation event through analog signaling
- Consult in the survey and design of a wireless sensor network to collect field instrument data in hilly terrain using Campbell Scientific's LOGGERNET

Dec 2015 – Mar 2017 **Undergraduate Research Fellow**
PI: Jonathan Woolley, Project Scientist
Western Cooling Efficiency Center
University of California, Davis

- Studied intuitive, repeatable software modeling techniques for hybrid air conditioning systems
- Composed complex, multi-mode performance maps for desiccant-based dehumidification and indirect evaporative cooling air handling units

TEACHING EXPERIENCE

Fall 2017 **Teaching Assistant**
Fall 2018 – Spring 2019 Introduction to Engineering Design and Communication (ENG 3)

- Provide critical feedback to students' presentations for mastery and greater confidence in engineering communications during weekly studio sections
- Teach logical and methodical strategies for problem solving to lower-division undergraduate students
- Teach high-level programming concepts in physical computing using sensors interfaced with Arduino and Raspberry Pi
- Assist students with defining project scope to meet client constraints and timeline

WORK EXPERIENCE

Apr 2017 – June 2018 **Associate Automation Engineer**
Banks Integration Group
Vacaville, CA

- Wrote Good Manufacturing Practice (GMP)-compliant specifications and test documents for purified water system
- Troubleshooted and identified solutions during emergency support calls and startup at client sites
- Translated a PLC system based on Allen-Bradley MicroLogix platform to ControlLogix platform with GEMS Process Library Objects
- Interfaced RSLogix5000 tags with FactoryTalk View Alarms & Events Server
- Produced company IT maintenance tools, administer VMWare VCSA and Windows Server

PRESENTATIONS

Oral Presentation

"Advanced sensing technologies and AI to develop decision-support tools for agriculture," Dept. of Biological and Agricultural Engineering, UC Davis, October 2019

"Identification of Drought Stress in Turfgrass Using Multispectral and Hyperspectral Remote Sensing," ASABE International Meeting, Boston, MA, July 2019

"Modeling the Munters DryCool HCUc," National Renewable Energy Laboratory, Golden, CO, September 2016

Poster Presentation

"Identification of Drought Stress in Turfgrass Using Hyperspectral and Multispectral Remote Sensing," ASABE California/Nevada Sectional Meeting, Tulare, CA, February 2019

AWARDS AND HONORS

2019	Award for Student Oral/Poster Presentation Competition – NRES Technical Community *ASABE Annual International Meeting, Boston, MA*
2019	2nd Place, Graduate Student Poster Competition *ASABE California/Nevada Section*
2019	Jastro-Shields Travel Award *UC Davis, Department of Biological and Agricultural Engineering*
2018	Outstanding Senior Award in Biological Systems Engineering *UC Davis, Undergraduate Education*
2018	Department Citation *UC Davis, Department of Biological and Agricultural Engineering*
2016 – 2017	Dean's Honors List *UC Davis, College of Engineering*

ACADEMIC SERVICE

Winter 2019 – Present	Graduate Student Mentor, ASABE Robotics Student Competition
2016-2017	Vice President, Society of Biological Engineers at UC Davis
Spring 2017, Fall 2017	Sustained Dialogue Moderator, UC Davis LEADR

LICENSES AND CERTIFICATIONS

FCC Amateur Radio License, Extra Class
FAA Remote Pilot Certificate

REFERENCES

Reference contact list promptly available upon request.