Grace (Han) Liu

Veihmeyer Hall 136, One Shields Ave., Davis, CA, 95616
Tel: +1 - 5308671416
E-mail: haxliu@ucdavis.edu

EDUCATION

Ph.D., University of California, Davis — Davis, CA, US
Geography Graduate Group — expected in 2020

Bachelor of Science, Nanjing University — Nanjing, China
Geographic Information Science — 06/2015

Exchange Student, National Central University — Taiwan
Department of Earth Sciences& Center for Space and Remote Sensing Research — 02/2014 - 06/2014

SKILLS&SPECIALITIES

Licensed Auto-pilot
Software: ENVI, ArcGIS, MATLAB, Microsoft office
Programming Languages: R, Python, SQL, command line Linux
Bilingual (English and Mandarin)

RESEARCH/WORK EXPERIENCE

Agriculture Data Insight and Discovery Internship — 06/2019 - 09/2019
(the Climate Corporation, mentor: Johnny Xiong)

Remote Data Collection for Adaptive Rangeland Management on Public Lands
(Advisor: Dr. Leslie Roche and Dr. Yufang Jin)
Graduate student researcher, University of California, Davis — 07/2018 - present
Content: The goal of this collaborative research is to examine long-term response trajectories of rangeland ecosystem services to landscape management treatments (juniper removal methods) and extreme disturbances (wildfire), as well as provide decision-support tools to enhance long-term adaptive rangeland management.

A Data-Driven Decision Support System for Monitoring and Predicting Forage Production in California's Rangeland
(Advisor: Dr. Yufang Jin) — 01/2016 - present
Graduate student researcher, University of California, Davis
Content: This research focuses on developing a calibrated remote sensing tool to map near-real time and historical forage productivity, and building forage productivity models using long term remote sensing data, climate, and geospatial database of environmental attributes such as soils, landform, solar radiation.

Urban 4D Vegetation Quantity and Ecosystem Service Evaluation Integrated Remote Sensing and Phenology
(Advisor: Dr. Li Feng) — 06/2014 -12/2014
Research Assistant, Nanjing University
Content: We examined the phenological pattern of urban vegetation using remote sensing images for classification of urban vegetation. In addtion, we established a four-dimensional vegetation quantity model based on the tracked phenological pattern and three-dimensional vegetation quantity for evaluating urban vegetation biomass.

Remote Sensing of the Moon Using China's Lunar Mission
(Advisor: Professor Yunzhao Wu) — 12/2012-12/2013
Leader, Nanjing University
Content: This research focused on spectral analysis and mineral component estimation of lunar soil using the remote sensing data of the moon. We explained the relationship between spectral characteristics and lunar Fe& Ti distribution, and estimated the mineral components of Mare Crisium on the Moon.

PUBLICATIONS& PROCEEDINGS

Scott Devine, Anthony O' Geen, **Han Liu**, Yufang Jin, Helen Dahlke, Royce Larsen, Randy Dahlgren. (2019) Terrain attributes and forage productivity predict catchment-scale soil organic carbon stocks. Manuscript submitted for publication.

Erica Orcutt, **Han Liu**, Barbara Leitner, and Philip Leitner. (2019). Modeling optimal and marginal habitat in a non-equilibrium system for a threatened California endemic. Front. Vet. Sci. Conference Abstract: GeoVet 2019. Novel spatio-temporal approaches in the era of Big Data. doi: 10.3389/conf.fvets.2019.05.00003

Scott Devine, Anthony O' Geen, Royce Larsen, Helen Dahlke, **Han Liu**, Yufang Jin, Randy Dahlgren. (in press). Microclimate-forage growth linkages across two strongly contrasting precipitation years in a Mediterranean catchment. Ecohydrology.

Han Liu, Randy Dahlgren, Royce Larsen, Scott Devine, Leslie Roche, Anthony O' Geen, Andy Wong, Sarah Covello, and Yufang Jin. (2019). Estimating Rangeland Forage Production Using Remote Sensing Data from a Small Unmanned

Aerial System (sUAS) and PlanetScope Satellite. Remote Sensing, 2019,11(5):595.

Li Feng, Liujun Zhu, **Han Liu**, Yinyou Huang, Peijun Du. (2015). Urban Vegetation Classification Based on Phenology Using HJ-1A/B Time-series Imagery. Joint Urban Remote Sensing Even-JURSE, Lausanne, Switzerland. (EI).

Han Liu, Li Feng, Liujun Zhu, Yinyou Huang. (2014). Performance of Filters for City Region. HJ-1A/B NDVI Time-series Analysis. IN CHINESE

Han Liu, Xianfeng Zhou, Xuewei Zhang. A Component Research of Mare Crisium on the Near Side of the Moon. (2014). Lunar and Planetary Science Conference, the Woodlands, Texas, USA.

ZHANG Xuewei, JIANG Yun, **LIU Han**, et al. Spectrometric Study of Lunar Pyroclastic Deposits. Earth Science Frontiers. 2014, 21(6). IN CHINESE

LIU Fangyuan, XIAO Sirong, **LIU Han**, MU Zhongyi. Research on Impacts of Climate Change on Agriculture in Hebei Region. Geography and Geo-Information Science, 2014,30(4):122-126. IN CHINESE

WANG Ruijun, **LIU Han**, JIANG Hongjun, YANG Xiaolan, ZHANG Ru-chun, LI Zhi-qiang. Comprehensive Assessment of Eco-environment Vulnerability in Hebei Province Based on ArcGIS. Meteorological and Environmental Research, 2011, 2 (10):84-90.

LEADERSHIP AND TEACHING EXPERIENCES

Co-Instructor, *Drone camp* 07/2017

The annual course was organized by the University of California, Division of Agriculture and Natural Resources. I was invited to teach participants from industries, NGOs, and school districts on operating sUAS.

Teaching Assistant, *Aerial photo interpretation and remote sensing* 09/2015-12/2015

"Grace was always able to clarify any questions we had in lab and was always willing to show us how to do something if did not understand" (student evaluation)

Co-Instructor, *Environmental monitoring and research using sUAS* 01/2017-03/2017

Designed and taught a graduate-level seminar class with Dr. Jin and Andy Wong. We taught the fundamentals of remote sensing using sUAS, from sensors and aircraft selection and integration, and project design to data collection, processing, and analysis. Students was able to walk out of the class with the ability to design and manage exciting sUAS related research, such as monitoring forest, alfalfa, and orchards.

Event Host, *UC Davis picnic day* April 2017, 2018, 2019

Helped designed and built a photo booth to capture portraits of visitors in the visible and thermal infrared wavelength. The booth now has a user interface for collecting contact information, and a backend script that automatically preprocesses the captured images and sends out emails. Over 150 visitors visit our booth each year.

PRESENTATIONS & CONFERENCES

Understanding Interannual Forage Production Variability of Annual Grassland in an Era of Changing Climate using Satellite Remote Sensing Observations, *American Geophysical Union Fall Meeting***,** Washington DC, 2019

Monitoring Forage Production and Phenological Cycles of California Rangelands, *American Geophysical Union Fall Meeting***,** Washington DC, 2018

Estimating Rangeland Forage Production Using Remote Sensing Data from a Small Unmanned Aerial System (sUAS) and PlanetScope Satellite, *California Cattlemen's Association CCA & CCW Annual Convention, Sparks, NV, 2018*

Estimating Rangeland Forage Production Using Remote Sensing Data from a Small Unmanned Aerial System (sUAS), *American Geophysical Union Fall Meeting***,** New Orleans, LA, 2017

Estimating Rangeland Forage Production Using Remote Sensing Data from a small Unmanned Aerial System (sUAS), *UC Davis – Zhejiang Soil Science Summit, Davis, CA, 2017*

Monitoring Forage Production of California Rangeland Using Remote Sensing Observations, *American Geophysical Union Fall Meeting***,** San Francisco, CA, 2016

Monitoring Forage Production in Rangeland Using Remote Sensing Observations, *IEEE International Geoscience and Remote Sensing Symposium*, Beijing, China, 2016

International Workshop on Multi-Sensor Data Fusion for Remote Sensing Image Analysis in Guangdong, Guangzhou, China, 2014

HONORS&AWARDS

Henry A. Jastro Research award	2018-2019
Henry A. Jastro Research award	2017-2018
Special Awards for Students with Outstanding Performance in Academic Competition	2012-2013
GIS Application Skills Competition among National College Students – Top Award (1/47)	2013
People's Scholarship of Nanjing University	2011-2015
Hai Chen Scholarship	2012

PROFESSIONAL SOCIETIES

American Geophysical Union

Academy of model Aeronautics