

HAEWON CHI

Agroecosystem Sustainability Center (ASC)
Department of Nature Resources and Environmental Science
University of Illinois, Urbana-Champaign, IL, US

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RESEARCH INTERESTS

Crop Yield, Machine Learning and Deep Learning, Remote Sensing, Community Land Model (CLM), Data Assimilation

EDUCATION

University of Illinois, Urbana-Champaign (UIUC)

Illinois, US

Ph.D. student of Natural Resources and Environmental Science

May. 2023 – present

- Advisor: Prof. Kaiyu Guan

Yonsei University

Seoul, Korea

Master of Civil and Environmental Engineering

Mar. 2020 – Feb. 2022

- Thesis: "The Impact of GRACE Assimilation on Hydrologic Variation with CLM5-BGC"
- Advisor: Prof. Yeonjoo Kim, Selected for Dissertation Fellowship

Sungshin Women's University (SSWU)

Seoul, Korea

Bachelor of Interdisciplinary Eco-science

Mar. 2016 – Feb. 2020

- Thesis: "A Study on Drought across Korea and Risk Assessment Framework"
- Advisor: Professor Hyun Seon Hong

PUBLICATIONS

- [1] **Chi, H.**, Seo, H., & Kim, Y. (2024): "Hydrological trends captured by assimilating GRACE total water storage data into the CLM5-BGC model," *Journal of Hydrology*, 629
- [2] Seo, J., **Chi, H.**, Kim, H. J., & Kim, Y. (2022): "Hydrological Drought Risk Assessment for Climate Change adaptation in South Korea," *Journal of Korea Water Resources Association*, 55(6), 421-435
- [3] Kang, B., Kim, Y., **Chi, H.**, Seo, J., et al. (2021): "Sustainability of Drought Hazard Risk Management for Climate Change Adaptation," *International Hydrological Program (IHP)* 8th year, Ministry of Environment
- [4] Seo, J., **Chi, H.**, & Kim, Y. (2021): "Sustainability of Drought Hazard Risk Management for Climate Change Adaptation," *Magazine of Korea Water Resources Association*, 54(2) 68-73
- [5] Kang, B., Kim, Y., **Chi, H.**, Seo, J., et al. (2020): "Sustainability of Drought Hazard Risk Management for Climate Change Adaptation," *International Hydrological Program (IHP)* 7th year, Ministry of Environment

CONFERENCE

- [1] **Chi, H.**, Seo, H., & Kim, Y. "Impact of GRACE Assimilation on Hydrologic Variation with CLM5 BGC," Korea Water Resources Association
- [2] **Chi, H.**, Seo, H., & Kim, Y. "Impact of Assimilating the Terrestrial Water Storage on the Water and Carbon Cycles in CLM5.0-BGC," Korea Water Resources Association
- [3] Kang, B., Kim, Y., **Chi, H.**, Seo, J., Lee, J., & Seo, H. "Sustainability of Drought Hazard Risk Management for Climate Change Adaptation," Korea Water Resources Association
- [4] Cho, K., Choi, S., **Chi, H.**, & Kim, Y. "Machine Learning Method for Improving WRF-Hydro Streamflow Prediction," Korea Water Resources Association

TECHNICAL SKILLS AND FIELD EXPERIENCES

- Conducted soil moisture field campaigns across 30 commercial fields (IL); installed and managed 58-station sensor network
- Operated Acclima TDR-310W (fixed) for multi-depth (5–50 cm) measurements
- Programmed and operated Campbell Scientific CR300 dataloggers for automated soil moisture data collection
- Performed calibration, maintenance, and QC/QA of in-situ sensor data
- Managed time-series soil moisture data for satellite validation and land surface model input

PROJECTS

- [1] Field-based Soil Moisture Measurement for Yield Modeling in Illinois Farmlands, University of Illinois Urbana-Champaign, Graduate Researcher, May 2023 – Nov. 2024
- [2] Development of DB and Model Technology for Adaptation of Water-Forest-Ecological Climate Change & Evaluation of Greenhouse Gas Reduction, Korea Environment Institute (KEI), Graduate Researcher, Feb. 2020
- [3] Improvement of Ecological Hydrological Drought Prediction and Development of Drought Impact Prediction Technology through Advanced Land Model in Korea and Asia based on Machine Learning, National Research Foundation (NRF), Graduate Researcher, Sept. 2020 – Feb. 2021
- [4] Development of Integrated Water Resource Vulnerability Evaluation System and Basin In-field Integrity Evaluation Technology, Korea Environment Industry and Technology Institute (KEITI), Undergraduate Researcher, Sept. 2019 – Dec. 2019

TEACHING AND MENTORING EXPERIENCE

<i>Teaching Assistant</i> , Environmental Energy Engineering Practice, SSWU	Fall 2022
<i>Teaching Assistant</i> , Fluid Mechanics, Yonsei University	Spring 2020
<i>Senior Mentor</i> , Freshmen Mentoring Program, SSWU	Mar. 2018 – Jul. 2018

SCHOLARSHIPS

Graduate – UIUC

- *Research Assistant (RA) Scholarship*, Fall 2023 / Spring-Fall 2024 / Spring 2025

Graduate – Yonsei University

- Full-tuition Fellowship, National Research Foundation (NRF) of Korea, Spring 2020-Fall 2022
- *Dissertation Fellowship*, Fall 2021
- *Teaching Assistant (TA) Scholarship*, Spring 2020

Undergraduate – SSWU

- *Academic Excellence Scholarships*, Spring-Fall 2017 / Spring 2019
- *Mentoring Scholarship*, Fall 2018
- *President's Special Scholarship*, Fall 2016

ADDITIONAL INFORMATION

Credit Exchange: Department of Civil and Environmental Engineering, Sejong University, Seoul, Korea

Languages: Korean (native), English (advanced), German (elementary)