

# SOYOUNG SOHN

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## EDUCATION

**University of Illinois, Urbana-Champaign** **Illinois, USA**  
*Ph.D. student, Civil and Environmental Engineering* Aug. 2024 – Present  
 • Advisor: Prof. Ana P. Barros

**Yonsei University** **Seoul, Korea**  
*M.S., Civil and Environmental Engineering* Mar. 2021 – Feb. 2023  
 • Thesis: “Urbanization-Induced Changes in Growing Season Length and Carbon Storage”  
 • GPA 4.02/4.3 (Advisor: Prof. Yeonjoo Kim)

*B.S., Civil and Environmental Engineering* Mar. 2017 – Feb. 2021  
 • Thesis: “Research on Safety Analysis of Barrier-Free Forest Trail and Design of a New Trail Including Location-Allocation Analysis”

## RESEARCH INTERESTS

Hydrometeorology, Satellite Imagery Analysis, Water-Cycle Processes in Mountainous Regions, Flash Floods, Long-term Data Analysis, Vegetation Dynamics, Vegetation Index, Urban Heat Island

## RESEARCH EXPERIENCE

**Researcher in Water Resources Engineering and Science, University of Illinois at Urbana-Champaign**  
*Research Assistant* (Advisor: Prof. Ana P. Barros) Aug. 2024 – Present  
 • Performed quality assurance and quality control on precipitation data from the Appalachian raingauge network.  
 • Experienced hydrological model run and analysis.

**Hydrology & Eco-climate Lab, Yonsei University**  
*Research Assistant* (Advisor: Prof. Yeonjoo Kim) Mar. 2021 – Jul. 2023  
 • Analyzed long-term trends in phenological timing using remote sensing data.  
 • Estimated vegetation phenological responses to urban environments of increased night-time light.  
 • Evaluated temperature sensitivity of vegetation phenology.

**National Transportation Technology Advancement Project** Apr. 2021 – Dec. 2022  
*Research Assistant* (PI: Prof. Yeonjoo Kim, Sponsor: Korea Agency for Infrastructure Technology Advancement)  
 • Calculated high resolution gridded temperature using PRISM adapted for Korea’s mountainous terrain.  
 • Analyzed biomass dynamics and urban heat island impacts on phenology, carbon uptake, and hydrology.

**Hydrology & Eco-climate Lab, Yonsei University**  
*Undergraduate Research Assistant* (Advisor: Prof. Yeonjoo Kim) Mar. 2019 – Feb. 2021  
 • Assisted in data collection, analysis, and literature reviews to survey local climate and historical wildfire records.  
 • Calculated target area’s dNBR using Landsat and MODIS surface reflectance data.  
 • Estimated decrease of annual ET from pre-fire annual ET using MODIS evapotranspiration data.  
 • Developed evaluation code and analyzed binary data as an input of Ent Terrestrial Biosphere Model for a joint international PLUMBER 2 project.

## PUBLICATIONS

Kim, J.,\* **Sohn, S.**,\* Wang, Z. et al. (2024). “Nonuniform response of vegetation phenology to daytime and nighttime warming in urban areas.” *Commun Earth Environ* 5, 308.

\* denotes equal contributions.

Kim, J., **Sohn, S.**, & Kim, Y. (2019). “Remote Sensing-based Estimation of Evapotranspiration Changes due to the 2019 April Gangwon-do Wildfire.” *Journal of Korea Water Resources Association*, 52(11), pp.941-946 (in Korean).

## PRESENTATIONS

Kim, J., **Sohn, S.**, & Kim, Y. (2023 Dec.). “Temperature Sensitivity of Vegetation Phenology with Increasing Light in Urban,” **American Geophysical Union 2023 Fall Meeting**, San Francisco, USA. [Poster]

**Sohn, S.**, Kim, J., & Kim, Y. (2022 Nov. – Dec.). “Analysis of Temperature Rise and Vegetation Growth Season Length Changes due to Urbanization based on Google Earth Engine,” **Korean Society of Climate Change Research Winter Conference**, Jeju, Korea. [Poster]

**Sohn, S.**, Kim, J., & Kim, Y. (2022 May). “Analysis on the Impact of Urbanization on Vegetation Growing Season Length using Google Earth Engine,” **Korea Water Resources Association 2022 Meeting**, Busan, Korea. [Oral]

Choi, S., **Sohn, S.**, & Kim, Y. (2021 Jun.). “Developing Radar-based Rainfall Prediction Model with Generative Adversarial Network (GAN),” **Korea Water Resources Association 2021 Meeting**, Gwangju, Korea. [Oral]

## SCHOLARSHIPS

Maidment Fellowship in Hydrosystems Engineering	2024 – 2025
Top Graduate Dissertation Fellowship	Fall 2022
AI Water Informatics Interdisciplinary Program Scholarship	Fall 2022
Internship Scholarship for Science and Engineering Students	Fall 2019

## AWARDS

<i>Best Thesis Award (1<sup>st</sup> Prize)</i> , CEE Department, Yonsei University	Dec. 2023
<i>Social Entrepreneurship Award</i> , Yonsei Institute for Higher Education Innovation	Dec. 2020
<i>Excellence Award</i> , Creative Junior Talent, Yonsei College of Engineering	Dec. 2020

## LEADERSHIP ACTIVITIES

President, Young Professional Network (YPN-Yonsei)	Mar. 2022 – Jul. 2023
Lab Manager, Yonsei Hydrology & Eco-climate Lab	Mar. 2021 – Feb. 2022
President, Yonsei Civil & Environmental Engineering Student Club	Mar. 2021 – Aug. 2021

## PROFICIENCY IN SKILLS

**Programming:** MATLAB, Python, JavaScript

**Other:** Google Earth Engine, QGIS, ArcGIS, Linux, Machine Learning

## REFERENCES

**Ana P. Barros** (Ph.D. Advisor), Professor [barros@illinois.edu](mailto:barros@illinois.edu)

Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign

**Yeonjoo Kim** (M.S. Advisor), Professor [yeonjoo.kim@yonsei.ac.kr](mailto:yeonjoo.kim@yonsei.ac.kr)

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