# JaeHwi Kim

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## Education

Mar. 2021 ~ Feb. 2023 — **Changwon National University**, School of Civil, Environmental and Chemical Engeineering — Changwon, Korea

Thesis: Characterization of dynamic site properties in the Gimhae Plains using the Microtremor Array Method and the Horizontal-to-Vertical Spectral Ratio method
*Advisor: Seokho Jeong*

*M.S. in Civil, Environmental and Chemical Engeineering*
GPA: 4.44 / 4.5

Mar. 2014 ~ Feb. 2021 — **Changwon National University**, School of Civil, Environmental and Chemical Engeineering — Changwon, Korea

*B.S. in Civil, Environmental and Chemical Engeineering*
GPA: 3.77 / 4.5

## Research Interests

- Geophysical exploration
- Ground motion simulation
- Seismic hazard assessment
- Probabilistic seismic hazard analysis
- Seismic site effects

## Publications

### International _ Journals

1. **Jaehwi Kim**,Giseok Heo,Dongyoup Kwak,Seokho Jeong, "The Relationship between Bedrock Depth and Site Fundamental Frequency in the Nakdonggang Delta Region, South Korea", *GEOTECHNICS*, (2023)
2. Giseok Heo,**Jaehwi Kim**,seokho Jeong,Dongyoup Kwak, "Evaluation of SPT N and Vs models depending on geologic attributes: case study at Busan, South Korea", *GEOTECHNICS*, (2023) - submitted

### Domestic _ Journals

1. **JaeHwi Kim**, Seokho Jeong, "Characterization of Deep Shear Wave Velocity Profiles in the Gimhae Plains Using the Microtremor Array Method", Journal of the Korean geotechnical society v.38 no.8, (2022)

## Conference Presentations

1. **JaeHwi Kim**, Seokho Jeong, "Estimation of velocity structures in the Gimhae Plains using horizontal-to-vertical spectral ratios from microtremors", KGS Fall National Conference, Seoul, Korea (Oct. 2021) - Oral
2. **JaeHwi Kim**, Seokho Jeong, "Characterization of dynamic site properties in the Gimhae Plains using the Microtremor Array Method and the Horizontal-to-Vertical Spectral Ratio method", QuakeCoRE Annual Meeting, Napier, New Zealand (Aug. 2022) - Poster
3. **JaeHwi Kim**, Seokho Jeong, "A shear wave velocity model of Gimhae Plains sediments based on the Microtremor Array Method", KSCE 2022 Convention, Busan, Korea (Oct. 2022) - Oral
4. **JaeHwi Kim**, seokho Jeong, "Site effect assessment of the Late-Quaternary sediments in the Nakdonggang delta region using HVSR and MAM techniques", 2023 Busan/Ulsan/Gyeongnam Brance Convention of Korean Society of Civil Engineers , Busan, Korea (Sep. 2023) - Oral
5. **JaeHwi Kim**, Junsu Oh, seokho Jeong, "Site effect assessment of the Nakdonggang delta sediments using a depth-dependent shear wave velocity model", 2023 Earthquake Engineering Society of Korea Workshop, Jeju-do, Korea (Sep. 2023) - Oral

## Skills and Techniques

- Programming Language : Python (Basemap , Scipy , Obspy , PyKrige )
- Geophysical Software (Geopsy , Dinver , PySeismoSoil , DEEPSOIL )
- Geophysical Exploration (HVSR, Surface Wave Inversion)

## Reaseach Experiences

- **Development of Vibration Amplification Correction Technology Using Real-Time Seismic Observation Data (March 2023 – Present)**

  *R&D Management Agency : Korea Meteorological Institute, Student Researcher*

  - Review of Current Alert and Forecasting Criteria in Korea and Abroad
  - Investigation of the Operation Patterns and Characteristics of the Seismic Observation Stations
  - Comparison of Real-Time Seismic Information Processing Algorithms

- **Determining Design Ground Motion for the Nakdonggang Delta Region Using Broadband Hybrid Ground Motion Simulation (March 2023 – Present)**

  *R&D Management Agency : Changwon National University, Principal Investigator*

  - Collection of Data Related to Current Seismic Design Standards in South Korea and Abroad
  - Broadband Hybrid Ground Motion Simulation (Virtual Earthquake Scenario Setup and Execution)
  - Ground Response Analysis (DEEPSOIL, PySeismoSoil)

- **Validation and Enhancement of a 3D Physics-Based Ground Motion Simulation Platform for Seismic Hazard Quantification in the Korean Peninsula (March 2023 – Present)**

  *R&D Management Agency :Korea Institute of Science and Technology Information, Participant*

- Enhancement of a 3-D Velocity Model of the southeastern part of the Korean Peninsula
- Simulation Execution and Result Comparison

- **Determining the Seismic Amplification Characteristics of Moderate and Minor Earthquake- Prone Areas Based on Microtremor and Small Scale Earthquake Data (June 2020 – February 2023)**

  *R&D Management Agency : National Research Foundation of Korea, Assistant Researcher*

  - Geophysical Exploration (HVSR, Surface Wave Inversion)
  - Data Analysis
  - Development of a fundamental frequency map of the the southeastern part of the Korean Peninsula (Kriging)

- **Experimental Results and Analysis of the Existing Testbed Area for Expanding High- Resolution Seismic Observation Network (October 2022 – November 2022)**

  *R&D Management Agency : Korea Meteorological Institute, Student Researcher*

  - Geophysical Exploration (HVSR, Surface Wave Inversion)
  - Data Analysis

- **Ground Information Collection for the Construction of Ground Motion Simulation in Busan, South Korea (June 2020 – August 2022)**

  *R&D Management Agency : Korea Institute of Science and Technology Information, Student Researcher*

  - Geophysical Exploration (HVSR, Surface Wave Inversion)
  - Data Analysis
  - Development of a 3-D Velocity Model of the southeastern part of the Korean Peninsula for Ground Motion Simulation