

CURRICULUM VITAE

Jan. 2024

Hyun Dong Kim, Ph.D.

E-mail : kim.h@ufl.edu



EDUCATION AND CERTIFICATE

- 2023 - present University of Florida, Ph.D. Student
Major: Coastal and Oceanographic Engineering (Coastal Ecosystem Dynamics)
Center for Coastal Solutions (CCS affiliated)
Advisor: Professor Xiao Yu / Co-Advisor: Professor David Kaplan
- 2017 - 2020 Osaka University, Ph.D.
Major: Civil Engineering
Advisor: Professor Shin-ichi Aoki
Thesis Title: *Analysis of Beach Nourishment Effect using Artificial Intelligence*
- 2015 - 2017 University of Delaware, M.CE.
Major: Civil and Environmental Engineering
Advisor: Professor Nobuhisa Kobayashi
Center for Applied Coastal Research (CACR affiliated)
Thesis Title: *Coastal Protection Techniques for Storm Damage, Experimental and Numerical Study on Rock Seawall in Swash Zone to Reduce Wave Overtopping and Overwash of Sand Beach*
- 2010 - 2015 University of California, Los Angeles (UCLA), B.S.
Major: Civil and Environmental Engineering
Advisor: Professor Keith D. Stolzenbach., and Michael K. Stenstrom
- 2021 Massachusetts Institute of Technology (on edX), Professional Certificate
Title: Machine Learning, Modeling, and Simulation
-Machine Learning, Modeling, and Simulation Principles
-Applying Machine Learning to Engineering and Science

APPOINTMENTS

- Oct. 2023 - Present **Executive Board Member / Commission Co-Chair, PIANC**
(The World Association for Waterborne Transport Infrastructure)
ExCom Member and Young Professional Commission Co-Chair
Appointed to be Chair in 2025
- July. 2023 - Present **Courtesy Adjunct Professor, Florida International College**
Lectures for summer/winter 2023 semesters for graduate students voluntarily
Design and lecture special lecture courses for undergrad/graduate students
- Jan. 2023 - Present **Graduate Research Assistant, University of Florida**
Department of Civil and Coastal Engineering, ESSIE
Research Assistant to Professor Xiao Yu

March. 2019 - Present	Secretary-General, PIANC Korea / Secretary, PIANC (The World Association for Waterborne Transport Infrastructure) Secretary-General of the Korean National Section of the PIANC
Sept. 2021 - Oct. 2022	Courtesy Postdoctoral Research Scholar, University of Florida Department of Civil and Coastal Engineering, the University of Florida
May. 2017 - Jun. 2020	Senior Research Engineer, Mirae Ocean Corporation Engineering consultant based in South Korea. Research Team Manager and was in charge of Research Projects and Global Projects (Coast, Ocean, Environment), Best Employee of the Year Award Recipient
May. 2015 - April. 2017	Graduate Research Assistant, Center for Applied Coastal Research University of Delaware College of Civil & Environmental Engineering Research Assistant to Professor Nobuhisa Kobayashi
Feb. 2013 - Oct. 2014	Head Recruiter, Seoul National University America Office Office of International Affairs,
Feb. 2011 - April. 2012	Teaching Assistant, University of California, Los Angeles UCLA College of Art and Architecture

AWARDS AND HONORS

2023	Certificate of Outstanding Merit Awarded by Herbert Wertheim College of Engineering, and the International Center of University of Florida
2023	Best Paper Presentation Award Awarded by International Conference, <i>i-Coast</i>
2022	Outstanding Teaching and Instructor Award Awarded by the Korea Island Development Institute, Ministry of the Interior and Safety
2021	Best Poster Presentation Award Awarded by the KGU Materials and Surface Engineering Research Institute, Japan
2021	Best Paper Award (KSCOE President's Research Award) Awarded by The Korean Society of Coastal and Ocean Engineers at the Korean Association of Ocean Science and Technology Societies Conference
2020	Future Tech Hackathon (Marine Debris Image Data), Excellence Award, 2nd Place Hosted by Presidential Committee on the Fourth Industrial Revolution
2020	Outstanding Research Paper Award (President of the Incheon Port Authority Award) President of the Incheon Port Authority Award for the best research paper presented at the Incheon International Ocean Forum 2020 hosted by the Ministry of Oceans and Fisheries
2020	Best Research Award 'Young Professionals Engineering Research Competition' sponsored by PIANC

- 2020 **Finalist**
2020 Ocean Startup Contest by Ministry of Oceans and Fisheries, Korea
- 2019 **Best Employee of the Year Award**
Awarded by the Mirae Ocean Corporation, South Korea
- 2018 **Grand Award**
Awarded by the Korea Basic Science Institute and Ministry of Science and ICT of Korea for the research entitled ‘Saving the Disappearing South Pacific Country, Tuvalu using the Nourishment Method’
- 2016 **2000 Outstanding Intellectuals of the 21st Century**
Awarded by International Biographical Centre
- 2016 **The President’s Lifetime Achievement Award**
Accumulated a total of 5,000 hours of volunteer service (President Obama)
- 2015 **Mayor’s Certificate of Appreciation, City of Los Angeles**
Awarded by Mayor Eric Garcetti, City of Los Angeles, USA
- 2014 **ASCE PSWC 2014 Environmental Team Competition, 2nd Place**
Awarded by American Society of Civil Engineers (ASCE) as an Environmental Team Director of ASCE UCLA Chapter
- 2014 **Certificate of Congressional Recognition**
Awarded by the Member of Congress, 27th District, Judy Chu
- 2014 **University of California, Los Angeles Korean Alumni Scholarship Recipient**
Awarded by the UCLA Korean Alumni Association
- 2012 **Doane Family Scholarship in Civil & Environmental Engineering Recipient**
Awarded by University of California, Los Angeles College of Engineering

PATENTS

Rip Current Analysis System Using Automatic Current Survey Drone

Patent No. 10-2020-0026969.

Ocean Cleaning Unit Using the Deep-Learning

Patent No. 10-2019-00001015.

Discovery System Using the Deep-Learning

Patent No. 10-2019-00001021.

Automatic Mooring System for Marine Observation Equipment

Patent No. 10-2018-0050495.

Motorboat Speed Control System for Improving the Low Velocity

Patent No. 10-2018-0050522.

PROFESSIONAL AFFILIATIONS AND SERVICES

Reviewer/ Referee

Education Subcommittee, PIANC Smart River 2025 (2023-2025)
Scientific Organizing Committee, PIANC World Congress 2024 (2023-2024)
Editor Committee, Global Ports Reports by the Ministry of Oceans and Fisheries (19-23)
Reviewer Committee, Korean Society of Coastal and Ocean Engineers (2021-Present)
Reviewer, Marine Geodesy, Taylor & Francis Online (2021-Present)
Reviewer, Journal of Marine Science and Engineering, MDPI (2021-Present)
Reviewer, Journal of Ocean Engineering and Marine Energy, Springer (2023-Present)
Reviewer, UCLA Financial Aid and Scholarships (2020-Present)
Reviewer Committee Chair, PIANC YP Award (2023-Present)
Session Chair/YP Award Jury, PIANC SMART RIVER Conference 2022 (2022)

Professional Organization Member

American Society of Civil Engineers (ASCE)
American Geophysical Union (AGU)
Japanese Society of Civil Engineers (JSCE)
Korean Society of Civil Engineers (KSCE)
Korean Society of Coastal and Ocean Engineers (KSCOE)
Korea Water Resources Association (KWRA)
The World Association for Waterborne Transport Infrastructure (PIANC)

Professional Organization Committee Member

ExCom member, PIANC (2023-present)
Chair, PIANC-Young Professionals Commission (2025 appointed)
Co-Chair, PIANC-Young Professionals Commission (2023-Present)
Vice-Chair Alt., PIANC-Young Professionals Commission (2020-2023)
Secretary-General, PIANC Korean National Section (2019-Present)

Student Organization

Department Representative, Engineering Graduate Student Council, Univ of Florida (23-present)
Vice President, ASCE COPRI, Univ of Florida Chapter, (2023-present)
Project Director, American Society of Civil Engineers, UCLA Chapter, (2013-2015)
President, World Korean Student Association Coalition (GLA), (2013-2015)
President, UCLA Korean Student Association (UKV), (2011-2013)
Vice President, University of Delaware Korean Student Association, (2015-2017)
Vice President (2012-2014), Event Coordinator (11-12), Chi-Epsilon, UCLA Chapter
Member, Chi-Epsilon, Univ of Florida Chapter (2023-present)

OTHER SERVICES

Special Youth Aide to the President Geun-hye Park, Elect-President of South Korea (2013)

Special Youth Aide to the President Elect Geun-hye Park for the Presidential Election Period in South Korea

Special Parliamentary Aide to Shim Yoon Joe, Member of the National Assembly (2013)

Special Parliamentary Aide to Mr. Shim, the member of the National Assembly of Korea

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

*Corresponding author

18. **Kim, H.D.**, Yu, X., and Kaplan, D. (2024) “Steady Flow over a Finite Patch of Submerged Flexible Vegetation”, *Water Resource Research*, 60, e2023WR03522.
17. Shim, K.T., Kim, K.H., Cho, B.S., and **Kim, H. D.** (2023). “Study of Beach Profile Change and Prediction for Maritime Construction”, *J. of Coastal Research*, 116(SI): 668-672.
16. **Kim, H. D***, Aoki, S., Oh, H.M., Kim, K. H., and Oh, J.H. (2021). “Seabed Sub-Bottom Sediment Classification using Artificial Intelligence”, *Journal of Coastal Research*, 114(SI): 305-309.
15. **Kim, H.D***, Kim, K.H., Shim, K., and Oh, H.M. (2021). “Applicability Study of a Sunken Vessel as an Artificial Reef in a High Wave Energy Zone”, *Energies*, 14(14), 4374.
14. Sohn, J., Alakshendra, A., Kim, H.J., Kim, K.H., and **Kim, H. D***. (2021). “Understanding the New Characteristics and Development Strategies of Coastal Tourism for Post-COVID-19: A Case Study in Korea”, *Sustainability*, 13(13), 7408.
13. **Kim, H. D***, and Kim, K.H. (2021). “Analysis of Characteristics of Rip Current using Dye Tracking Method”, *Atmosphere*, 12(6), 719.
12. **Kim, H. D***, and Aoki, S. (2021). “Analysis of Beach Erosion using Artificial Intelligence”, *Journal of Marine Science and Engineering*, 9(6), 600.
11. Shim, K.T, Kim, K, **Kim, H.D.**, and Kwak, K. (2020). "Analysis on Sediment Transport System in the East Coast of Korea", *Journal of Coastal Research*, 95(SI): 643-648.
10. **Kim, H.D.**, Aoki, S, Kim, K.H., Kim, J., Shin, B.S., and Lee, K. (2020). "Bathymetric Survey for Seabed Topography using Multibeam Echo Sounder in Wando, Korea", *Journal of Coastal Research*, 95(SI): 527-531.
9. **Kim, H.D.**, Aoki, S, Kim, K.H., and Sohn, J. (2019). "Effectiveness of Eco-friendly Options in Pacific Island Nations", *International Conferences on Asian and Pacific Coasts 2019*, Springer.
8. Lee, Y, Kim, K.H., **Kim, H.D***, Kim, J, Kwak, K., and Park, T. (2019). "High Wave Predictive Numerical Simulation for the Wave Alarm System", *Journal of Coastal Research*, 91(SI): 329-337.

7. **Kim, H.D.**, Kim, K.H., Aoki, S., Koo,S., and Kwak, K. (2019).
"Gravel Beach Nourishment at a Low-Wave Energy Environment to Control the Effects of Global Warming", World Scientific, *Coastal Sediments 2019*, pp.329-337.
6. Kim, K.H., Cho, S., **Kim, H.D.**, Shim, K.T. (2018).
"Wave Power Generation by Piezoelectric Sensor Attached to a Coastal Structure", *Journal of Sensor*, 2018(5):1-7
5. **Kim, H.D***, Choi, J, and Kwak, K. (2018).
"Analysis of River Velocity Measuring Methods for Low Velocity Considering the Characteristics of Rivers in Korea", *International Ocean and Polar Engineering*, 28th, pp. 899-902.
4. Lee, Y, **Kim, H.D***, and Kwak,K. (2018).
"Verification of Beach Erosion in West Coast of Korea", *Journal of Coastal Research*, 85(SI): 256-260.
3. Kobayashi, N. and **Kim, H.D.** (2017).
"Rock Seawall in Swash Zone to Reduce Wave Overtopping and Overwash of Sand Beach", *Journal of Waterway Port Coastal and Ocean Engineering*, 143(6), ASCE.
2. **Kim, H.D***, and Kim, K.H. (2014).
"Water Purification Investigation in the Lagoon", *Applied Mechanics and Materials*, Vols. 675-677.
1. Yoo, H.S.,Min, B.G., **Kim, H.D.**, and Widayati, A.Y.W. (2009).
"Beach Erosion Investigation for Shoreline Protection in Jeoncheon Coast", *International Conference on Asian and Pacific Coasts 2009*, World Scientific.

MANUSCRIPTS SUBMITTED FOR REVIEW _____

1. **Kim, H. D***, Kim, K.H., and Kwak, K. (under review). "Analysis and Verification of Beach Erosion at Kkotji Beach, Korea", *SN Applied Science*.

CONFERENCE PRESENTATIONS _____

- Kim, H.D.**, Xiao Yu, and David Kaplan. (2023). Numerical Study of Steady Flows Over a Finite Patch of Flexible Submerged Aquatic Vegetation. Talk presented at the *American Geophysical Union Fall Meeting*, San Francisco.
- Shim, K., Kim, K.H., Shin, B-S., and **Kim, H.D.** (2023). Analysis on Failure Causes of Dock due to Abnormal Wind Waves. *Coastal Engineering Proceedings*, Sept 2023
- Kim, H.D.**, Lee, Y., Kim, H.J., Sohn, J.I. (2022). **Award Winner**: Sustainable Island Development and Conservation Plan using Ecotourism. Presented at 2nd Korea Island Forum
- Kim, H.D.** (2021). **Invited Speaker**: Artificial Intelligence Application on Sediment Transport Talk presented at *PIANC YP-Com International Virtual Event*.

- Kim, H.D.**, Kim, K., Oh, H. (2021). Stability Analysis of Sunken Vessel for Artificial Reef Use Presented at *European Conference on Renewable Energy System (ECRES 2021)*, Istanbul, Turkey.
- Kim, H.D.** (2021). **Invited Lecture:** Artificial Intelligence Application on Engineering Talk presented at *The International Symposium on Materials Science and Surface Technology 2020 (MSST 2020)*, KGU Media Center, Yokohama, Japan.
- Kim, H.D.** (2020). **Invited Short Course:** Introduction to PIANC and Young Professionals Commission presented at the *KSCOPE Conference*, Jeju Island, South Korea
- Kim, H.D.**, Oh, H.M. (2020). Seabed Sub-Bottom Sediment Classification using AI Talk presented at the *i-COAST International Conference*, Busan, South Korea
- Kim, H.D.** (2020). Stability Analysis of Sinking Vessel as a Coastal Protection Talk presented at the *Korean Society of Civil Engineers*, Jeju Island, South Korea
- Kim, H.D.** (2020). Artificial Intelligence Application on the Beach Nourishment Technique Talk presented at the *Korean Association of Ocean Science and Technology Societies*, Busan, South Korea
- Kim, H.D.**, Kwak, K., Kim, J.H. (2019). Analysis of Rip Current Survey using Drone Talk presented at the *Hydrographic Society of Korea Fall Meeting*, Seoul, South Korea
- Kim, H.D.**, Aoki, S., Kim, K.H., and Sohn, J. (2019). Effectiveness of Eco-Friendly Design Options in Pacific Island Nations. Talk presented at the *International Conference on Asian and Pacific Coasts*, Hanoi, Vietnam.
- Kim, H.D.**, Kim, K.H., and Aoki, S. (2019). Gravel Beach Nourishment at a Low-Wave Energy Environment to Control the Effects of Global Warming. Talk presented at the *International Conference on Coastal Sediments*, St. Petersburg, FL, USA.
- Kim, H.D.**, Lee, Y.B., Lee, S.H., and Kim, J. (2018). Predictive Numerical Simulations for Deadly High Waves Caused by Hurricanes, Typhoons and Cyclones. Talk presented at the *American Geophysical Union Fall Meeting*, Washington, D.C.
- Kim, H.D.**, Shim, K.T., Kim, I.S., and Kwak, K. (2018). A Study on the Beach Profile Change Under Abnormal Wind Condition. Talk presented at the *Korean Society of Coastal and Ocean Engineering Fall Meeting*, Gangwon, Korea.
- Kim, H. D.**, Choi, J., and Kwak, K. (2018). Analysis of River Velocity Measuring Methods For Low Velocity Considering the Characteristics of Rivers in Korea. Talk presented at the International Society of Offshore and Polar Engineers, Sapporo, Japan.
- Kim, H.D.**, and Kobayashi, N. (2018). Settlement of Rock Seawall on Eroding Foreshore of Sand Beach. Talk presented at the *International Conference on Coastal Engineering*, Baltimore, MD, USA.
- Kim, H.D.**, Aoki, S., Lee, Y.B., Kwak, K., Kobayashi, N, and Onaka, S. (2018). The Effective Method of Beach Nourishment Placement. Talk presented at the *International Conference on Coastal Engineering*, Baltimore, MD, USA.
- Kim, H.D.**, Kobayashi, N., and Xavier, C.C. (2016). Comparison of Rock Seawall and Dune for Storm Damage Reduction. Talk presented at the *International Conference on Coastal Engineering*, Istanbul, Turkey.

Kim, H.D. (2015). **Invited Lecture:** Environmental Improvement using Aeration Techniques
Talk presented at *The International Symposium on Materials Science and Surface Technology 2015 (MSST 2015)*, KGU Media Center, Yokohama, Japan.

Kim, H.D., and Kim, K.H. (2014). Water Purification Investigation in the Lagoon. Talk
Presented at *International Conference on Renewable Energy and Environmental Technology*, Dalian, China

PROJECTS

GOVERNMENT PROJECTS AND SERVICES

1. “Analyzing the Sea Level Rise and Countermeasure in Korea”, Ministry of Oceans and Fisheries, Korea, Co-PI (August 2022 – present)
2. “Enhancement of International Capabilities and Promotion of Cooperation in Ocean Technologies”, Ministry of Oceans and Fisheries, Korea, Co-PI (January 2019 – present)
3. “Disaster Safety Port Construction Analysis and Policy Development”, Ministry of Oceans and Fisheries, Korea, Co-PI (August 2020 – present)
4. “Producing 100 m grid Resolution Prediction Data for the Numerical Simulation Prediction Model using Artificial Intelligence”, Korea Hydrographic and Oceanography Agency, Korea, Primary Researcher (May 2020 – December 2020)
5. “Analysis of the Occurrence Characteristics of Rip Current for the Marine Forecast Infrastructure”, Korea Hydrographic and Oceanography Agency, Korea, PI (May 2019 – December 2019)
6. “Stability Evaluation of Sunken Vessel Reef for the Marine Park in Gangneung, Korea” Korea Fisheries Resources Agency, Korea, PI (December 2018 – June 2019)
7. “Master Plan and Feasible Study for Tuvalu Coastal Erosion Protection” Ministry of Oceans and Fisheries, Korea, Primary Researcher (October 2017 – June 2018)
8. “Hydrographic Investigation for Large River Main Stream Analysis of Changes on Water Quality Characteristics”, Ministry of Environment, Korea, Primary Researcher (June 2017 – December 2017)

RESEARCH PROJECTS

1. “Combined Waves and Currents over Multi-Scale Topography: From Boundary Layer Dynamics to Parameterization”, National Science Foundation [Award#2123709], USA, Primary Student Researcher (Sept 2021 – Aug 2024)
2. “A Framework for Modelling Flow Over Flexible Submerged Aquatic Vegetation”, National Science Foundation [Award#1945685], USA, Primary Student Researcher (Mar 2020 – Feb 2024)
3. “Review of Coastal Erosion Effect from Anin Thermal Power Plant Construction Project”, Samsung C&T, Korea, Co-PI (Jan 2021 – 2023)

4. “Planning Task for Circulating Adaptive Coastal Erosion Management Technology Development for Climate Change Response”, Korea Institute of Marine Science & Technology, Korea, Primary Researcher (Oct. 2021 – Present)
5. “A Study on the Movement Path Prediction of Drowned Person in a Marine Accident” 416 Foundations, Korea, PI (December 2020 – July 2021)
6. “Practical Technologies for Coastal Erosion Control and Countermeasure Part III” Ministry of Oceans and Fisheries / KIMST, Korea, Primary Researcher (January 2020 – December 2020)
7. “Numerical Simulation for Beach Profile Change using Artificial Intelligence” Ministry of Education / LINC+, Korea, PI (September 2019 – January 2020)
8. “Practical Technologies for Coastal Erosion Control and Countermeasure Part II” Ministry of Oceans and Fisheries / KIMST, Korea, Primary Researcher (January 2019 – December 2019)
9. “Practical Technologies for Coastal Erosion Control and Countermeasure Part I” Ministry of Oceans and Fisheries / KIMST, Korea, Primary Researcher (July 2018 – December 2018)
10. Delaware Sea Grant NOAA SG2016-18 R/RCE-9
National Oceanic and Atmospheric Administration, USA, Primary Researcher (2016 - 2018)

TEACHING EXPERIENCE

INSTRUCTOR OF RECORD

Winter Semester Dec, 2023-Jan, 2024	Innovation and Development (Undergraduate course) Adjunct Professor, Florida International College, USA
Summer Semester 2023	Technology Sustainable Tomorrow (Graduate course) Adjunct Professor, Florida International College, USA
1 st Semester, 2021	Design of Irrigation Channels (Undergrad course) (711652-01) Guest Lecturer, Catholic Kwandong University, Korea
1 st Semester, 2021	Wave Mechanics (Graduate course) (2523-01) Guest Lecturer, Catholic Kwandong University, Korea
2 nd Semester, 2020	Civil Engineering Data Analysis using Deep Learning (070730-01) Guest Lecturer, Catholic Kwandong University, Korea
Winter 2019	Artificial Intelligence Application in Ocean Engineering Internal Training Instructor, Mirae Ocean Corporation
Fall 2019	Using UAV, ROV and Drone for the Marine Survey Internal Training Instructor, Mirae Ocean Corporation
1 st Semester, 2017	MATLAB in Civil Engineering (Graduate course) Guest Lecturer, Catholic Kwandong University, Korea
1 st Semester, 2017	Exploring Civil Engineers (Undergrad course) Guest Lecturer, Catholic Kwandong University, Korea

TEACHING ASSISTANTSHIPS

Winter 2016	Introduction to Coastal Engineering (CIEG 471) TA, University of Delaware, USA
Fall 2011- Fall 2012	Advanced World Music Performance (ETHNOMU 161J) TA, University of California, Los Angeles (UCLA), USA
Fall 2011- Fall 2012	World Music Performance (ETHNOMU 91J) TA, University of California, Los Angeles (UCLA), USA

TEACHING/ RESEARCH INTERESTS

Living Shoreline, Effect of Climate Change, Climate Change Solution, Digital Twin, MATLAB Application in Engineering, Introduction to Civil Engineering, Advances in Coastal Engineering, Research Methods/Statistics, Ocean Observations, Deep Learning Mechanisms, Social Issues in Coastal and Ocean Engineering, Ocean Survey Methods and Analysis, Natural Hazard Control Strategy, Coastal Hydrodynamics, Coastal Erosion-Sediment Transport, Coastal Structures, Nearshore Environment, Gravel Nourishment.

website: www.hyundongkim.com