Doeun (Do-Eun) Choe, Ph.D., P.E.

Assistant Professor, Department of Civil Engineering, New Mexico State University (NMSU)
Tel. 832-340-5008 (C), 575-646-1167 (O) email: dchoe@nmsu.edu

TEACHING	RESEARCH	SERVICES
• 2018 ASCE ExCEEd Teaching Fellow • Launched 'AI for Civil Engineers' courses & annual research exhibit • 5 year of Industrial Experiences. • Professional Engineering (PE) licensed in Texas • Experienced at Minority Serving Institutions.	• External grant as a PI/Co-PI: total of $6.2M ($848,141.00 at NMUS for 4 years) ○ Sponsor: NSF, NASA, US-DOT • Research Area: ○ Artificial Intelligence: fundamental & application ○ Probabilistic modeling; Uncertainty & risk ○ Infrastructure Resilience under Earthquakes, Fire, & Extraterrestrial (lunar) extreme ○ Steel & RC structures & infrastructures	• Two (2) ASCE/SEI technical committees • Faculty advisors for ASCE & Chi-Epsilon student chapter • Proposal reviewer: NSF, DOE+ • Journal services:15+ journals • Conference services • Minority Program services.

EDUCATION

Ph. D. in Civil Engineering/Structures, Texas A&M University (College Station) U.S.   Dec 2007
  Dissertation: Seismic Fragility Estimates and Sensitivity Analyses for Corroding Reinforced Concrete (RC) Bridges.
        Advisors: Prof. Paolo Gardoni & Prof. David V. Rosowsky
M.S. in Architectural Engineering/Structural Engineering, Inha University, South Korea   Feb 2002
  Thesis: Chaotic Behaviors and Application of Chaos Controls to Civil Structures subject to Earthquakes.
B.S. in Architectural Engineering, Inha University, South Korea   Feb 2000

APPOINTMENTS

Spring 2021~ present	Assistant Professor, Civil Engineering New Mexico State University, NM
	affiliated faculty, Industrial Engineering, New Mexico State University, NM
2013~ 2020	Assistant Professor, Civil and Environmental Eng. Prairie View A&M University, TX
2012~ 2013	Adjunct Assistant Professor, PVAMU, TX
2008~ 2012	Senior Staff Engineer, MMI Engineering, Inc., Houston TX
2004~ 200	Research Assistant, Zachary Department of Civil Engineering, Texas A&M University, College Station, TX

RESEARCH

RESEARCH INTEREST

- Artificial Intelligence: Machine/Deep Learning for Structural reliability, Damage Detection,
- Structural Reliability: Probabilistic Modeling, Uncertainty Modeling,
- Resilience: Earthquakes, Aging, Blast/Explosion/Fire, Hurricane, & Extraterrestrial (Lunar) Extreme,
- Various structural applications: Steel and RC buildings and bridges, Offshore wind turbine structures, &Lunar habitats.

EXTERNAL RESEARCH GRANT

NMSU (~4 years):
- 2024-2026 (**PI**-single PI): National Science Foundation (NSF) # 2429924, Amount: $243,974 (2 years); Titled: Uncertainty Quantification of Additively-Constructed Lunar Structures for Microgravity with Extreme Condition. Award info
- 2024-2026 (**PI**-single PI): National Aeronautics and Space Administration (NASA) # 80NSSC25K7986, Amount: $60,000 (1.5 years, additional support funding for NSF-2429924) Titled: Uncertainty Quantification of Additively-Constructed Lunar Structures for Microgravity with Extreme Condition.
- 2022-2024 (**CO-PI**): National Aeronautics and Space Administration (NASA) EPSCoR, Amount: $222,867.00 (Choe's portion). Titled: *NASA EPSCoR: Next Generation Additive Manufacturing for Space Applications.*

- 2022-2024: NASA (**PI**-single PI): New Mexico Space Grant Consortium, Amount: $50,000 ($25K+$25K). Titled: *Deep-learning enabled remaining life-cycle prediction of Environmental Control System of Space Vehicle.*
- 2023-2025 (**PI**-subaward): NSF-PVAMU, Amount: $150,000.00. Subaward of previously funded #1914692: NSF CREST *Center for Energy & Environmental Sustainability.* Subaward of previously funded as CO-PI (Listed as Former Co-Principal Investigator Award info)
- 2021-2023 (**PI**-single PI): National Science Foundation (NSF) # 2118586, Amount: $121,300 (1 years, extended 1 year); Titled: Uncertainty Modeling, Probabilistic Models, and Life-cycle Reliability of Floating Offshore Wind Turbine (transfer of #1700406, please refer below Award info)

Previous Institution:

- 2019-2024 National Science Foundation (NSF) (**Co-PI**) #1914692, Amount: $5,000,000 (5 years) PIs: R.Kommalapati, **D. Choe,** A.Amarasekara, Z.Huque, S. Leaves, Titled: *CREST Center for Energy & Environmental Sustainability* (Listed as Former Co-Principal Investigator Award info)
- 2017-2021 National Science Foundation (NSF) (**PI**-single PI): #1700406, Amount: $300,000 (3 years, extended 1 year); PI: D. Choe**;** Titled: Research Initiation Award: Uncertainty Modeling, Probabilistic Models, and Life-cycle Reliability of Floating Offshore Wind Turbine, Award info
- 2019-2020 Transportation Consortium of South Central States Climates (TRAN-SET), LSU through Primary sponsor: US Department of Transportation #19PPLSU11, Amount: $ 46,500 (1 year), Titled: Evaluation of Connections Between Light-Rail Link Terminals in New Orleans and Baton Rouge and Existing Public Transportation Systems (**CO-PI**)
- 2018-2019 Transportation Consortium of South Central States Climates (TRAN-SET), LSU through Primary sponsor: US Department of Transportation #18PPPVU01, Amount: $ 68,500 (1 year), Titled: Lifecycle Environmental Impact of High-Speed Rail System in the I-45 Corridor (**CO-PI**)
- 2017-2018 Transportation Consortium of South Central States Climates (TRAN-SET), LSU through Primary sponsor: US Department of Transportation #17PPLSU07, Amount: $ $24,500 (1 year), Titled: Recruiting and Retaining Qualified Workers at State Transportation Agencies (**CO-PI**)

SELECTED PEER-REVIEWED JOURNAL PUBLICATIONS (google scholar)

Chand, P. & **Choe, D.*** (Submitted 2025). Bridging the Gap: A Comprehensive Analytical Study of Traditional, Hybrid, and Explainable AI for Bridge Condition Prediction, Development for Built Environment, Elsevier

Choe, D.*, Atencio, R., Kimbrel, B. (Submitted 2025). Comprehensive Structural Evaluation of Additively Constructed Lunar Long-Term Habitat subject to Extreme Extraterrestrial Condition, ASCE Journal of Structural Engineering

Rasheed, A. & **Choe, D.*** Chand, P. (Submitted 2025). Artificial Intelligence-Based Framework for Wildfire Prediction in New Mexico, Fire, MDPI

Choe, D.*, & Ramezani, M. (2025). Fragility estimation for performance-based structural design of floating offshore wind turbine components. Reliability Engineering & System Safety, 253(C).

Ramezani, M., **Choe*, D.***, & Rasheed, A. (2025). Prediction of the flexural strength and elastic modulus of cementitious materials reinforced with carbon nanotubes: An approach with artificial intelligence. Engineering Applications of Artificial Intelligence, 150, 110544 (Corresponding)

Ramezani, M., **Choe, D.***., Heydarpour, K., & Koo, B. (2023). Uncertainty models for the structural design of floating offshore wind turbines: A review. Renewable and Sustainable Energy Reviews, 185, 113610.

Heydarpour, K., **Choe, D.*,** & Chung, K. (2023). Structural health monitoring of steel moment frame buildings via sequence-based recurrent neural networks. In 2023 IEEE Conference on Artificial Intelligence (CAI) (pp. 349-352). IEEE.

Choe, D.*, Kim, H. C., & Kim, M. H. (2021). Sequence-based modeling of Deep Learning with LSTM and GRU Networks for Structural Damage Detection of Floating Offshore Wind Turbine Blades. Renewable Energy, 174, 218-285.

Chipindula, J., Du, H., Botlaguduru, V. S., Choe, D., & Kommalapati, R. R. (2021). Life cycle environmental impact of a high-speed rail system in the Houston-Dallas I-45 corridor. Public Transport, 1-21.

Kim, C., **Choe, D.*,** Castaneda, H. (2020). Probabilistic Corrosion Initiation Models for Coastal Concrete Structures, Corrosion and Materials Degradation, 1(3), 328-344. (corresponding author)

Chung, K., Yoo, H., & **Choe, D.** (2020). Ambient context-based modeling for health risk assessment using deep neural network. Journal of Ambient Intelligence and Humanized Computing, 1-9 (corresponding author)

Chung, K., Yoo, H., **Choe, D*.**, & Jung, H. (2019). Blockchain network-based topic mining process for cognitive manufacturing. Wireless Personal Communications, 105(2), 583-597.

Kim, H. C., Kim, M. H., & **Choe, D. E.** (2019). Structural health monitoring of towers and blades for floating offshore wind turbines using operational modal analysis and modal properties with numerical-sensor signals. Ocean Engineering, 188, 106226.

Choe D., Gardoni P.*, and Rosowsky D. (2010). Fragility Increment Functions for Deteriorating Reinforced Concrete Bridge Columns., Journal of Engineering Mechanics ASCE, 136(8), 969-978.

Choe D., Gardoni P.*, Rosowsky D., and Haukaas T. (2009). Seismic Fragility Estimates for Reinforced Concrete Bridges Subject to Corrosion., Structural Safety, 31(4), 275-283.

Choe, D., Gardoni, P.*, Rosowsky, D., and Haukaas, T. (2008). Probabilistic Capacity Models and Seismic Fragility Estimates for RC Columns Subject to Corrosion., Reliability Engineering & System Safety, 93(3), 383-393.

Choe, D., Gardoni, P.*, and Rosowsky, D. (2007)., Closed-form Fragility Estimates Parameter Sensitivity and Bayesian Updating for RC Columns., Journal of Engineering Mechanics ASCE, 133(7), 833-843.

CONFERENCE PAPERS

Heydarpour, K., **Choe, D.*,** & Chung, K. (2023, June). Structural health monitoring of steel moment frame buildings via sequence-based recurrent neural networks. In 2023 IEEE Conference on Artificial Intelligence (CAI) (pp. 349-352). IEEE (Top-10 Selected out of 300+ oral presentation papers)

Choe, D. E., Talor, G., & Kim, C. (2020, August). Prediction of Wind Speed, Potential Wind Power, and the Associated Uncertainties for Offshore Wind Farm Using Deep Learning. In ASME Power Conference (Vol. 83747, p. V001T08A012). American Society of Mechanical Engineers.

Chipindula, J., Botlaguduru, V., **Choe, D.**, Kommalapati, R. (2019, Jun). Lifecycle Environmental Impact of a High-Speed Rail System in the I-45 Corridor, AWME ACE 2019

Chipindula, J., Botlaguduru, V., **Choe, D.**, Kommalapati, R. (2019, April). Lifecycle Environmental Impact of High-Speed Rail System in the Houston-Dallas I-45 Corridor, TranSET 2019

Metro, K., Hernández, J., Bogus, S., Harper, C., Kommalapati, R., **Choe, D**. (2019, April). Recruiting, Retaining, and Promoting for Careers at Transportation Agencies, TranSET 2019

Kim, C., Karayan, A.I., **Choe, D.,** Castro, P., Okeil, A., Taha, M., & Castaneda, H. (2018, Jun). Deterministic and probabilistic modelling framework of electrochemical/corrosion behavior of reinforced concrete specimens exposed in Marine environments: TranSET 2018.

Kim, C., Nyakiti, L., Kane, M, **Choe, D**., Castaneda, H. (2018, April). Deterministic and probabilistic modelling of electrochemical/corrosion process of reinforced concrete specimens exposed to marine environments: NACE Corrosion 2018.

Choe, D. (2016). Cost-Normalized Sensitivity Measure of Structural Reliability to Design Parameters: Proceedings of the International Symposium on Reliability Engineering and Risk Management: ISRERM 2016.

Choe, D., Bazie, M., & Pegdwende Kafando, P. (2016, Feb). Cost Sensitivity Measure on Life-Cycle Structural Reliability & Integrated Analysis of Structure, Material, and Cost. ASCE Geotechnical and Structural Engineering Congress 2016.

BOOK CHAPTERS

Cubides, Y., **Choe, D**., Castaneda, H. (Final editing review, Dec 2021), "Reliability-based service life approach of reinforced concrete structures exposed to corrosion environment", Corrosion Management for a Sustainable Future' NACE International.

Conference Organization Activities (International or National)

- ASCE Engineering Mechanics Institute Conference (EMI) 2025, Session Organization; Milad Roohi, Do-Eun Choe, Mohsen Zaker Esteghamati, John van de Lindt ; Al and Machine Learning for Risk, Uncertainty, and Resilience Assessment of Structural and Infrastructure Systems
- ASCE Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference (EMI/PMC) 2024 Local Organizing Committee
- International Conference on Bridge Maintenance, Safety and Management (IABMAS) 2024 Session Organization (Charing): SS 10 Artificial Intelligence for uncertainty, risk, and reliability assessment of Bridge infrastructure
- ASCE Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference(EMI/PMC) conference 2024 Minisymposium (Co-Charing) MS 0309, Leveraging structural sensing and monitoring for informed decision-making, mitigation, and post-event management

PRESENTATIONS & INVITED TALK

- Rasheed, A., Choe, D. (2023, June). Artificial Intelligence-based wildfire community risk assessment considering physical and social impacts. ASCE Engineering Mechanics Institute 2023 Conference.
- Heydarpour, K., Choe, D.*, & Chung, K. (2023, June). Structural health monitoring of steel moment frame buildings via sequence-based recurrent neural networks. In 2023 IEEE Conference on Artificial Intelligence (CAI) Choe, D. (2022, June). Seismic Fragility Estimates of RC Columns via Sequence-Based Deep Learning using LSTM and GRU neural networks. ASCE Engineering Mechanics Institute 2022 Conference.
- Choe, D., (2021, July 09) Fragility estimates of RC columns with sequence-based modeling of deep learning using LSTM and GRU neural networks, Research Seminar Series, University of Illinois, Urbana-Champaign.
- Choe, D., (2021, March) Sequence-based modeling of Deep Learning with LSTM and GRU Networks for Structural Damage Detection of Floating Offshore Wind Turbine, Engineering Seminar, College of Engineering, NMSU (internal).
- Choe,D., Shalley, S., Won, J.Y., Boo, S.Y. (2019, Jun) Uncertainties in the Design of Floating Offshore Wind Turbine Structures. The twenty-ninth International Ocean and Polar Engineering Conference, ISOPE-2019.
- Chipindula, J., Botlaguduru, V., Choe, D., Kommalapati, R. (2019, April). Lifecycle Environmental Impact of High-Speed Rail System in the Houston-Dallas I-45 Corridor, TranSET 2019.
- Choe,D., Shalley, S., Won, J.Y., Boo, S.Y. (2019, Jun) Uncertainties in the Design of Floating Offshore Wind Turbine Structures. The twenty-ninth International Ocean and Polar Engineering Conference, ISOPE-2019.
- Choe, D. (2016, Aug). Cost-Normalized Sensitivity Measure of Structural Reliability to Design Parameters: Proceedings of the International Symposium on Reliability Engineering and Risk Management: ISRERM 2016
- School of Civil, Environmental, and Architectural Engineering, School of Civil, Environmental, and Architectural Engineering, Korea University, South Korea, July 29 2016.
- Department of Architectural Engineering, Incheon National University, South Korea, June 17 2016.
- Department of Architecture & Architectural Engineering, Seoul National University, South Korea, May 26 2016
- Kumar, A.A. & Choe, D. (2016, June), Thinkers in STEM Disciplines Through Enhancing Fluid Intelligence of Students- ME by SEA, Texas A& M University, Corpus Christi 2016 (Evidence attached).
- Kumar, A.A. & Choe, D. (2014, April), Changing Paradigms: Practices in Student Preparation in STEAM Disciplines – Presentation at Annual TMCF MUPI, Atlanta 2014 (Evidence attached).
- School of Civil, Environmental, and Architectural Engineering, School of Civil, Environmental, and Architectural Engineering, Korea University, South Korea, July 29 2016.
- Department of Architectural Engineering, Incheon National University, South Korea, June 17 2016.
- Department of Architecture & Architectural Engineering, Seoul National University, South Korea, May 26 2016 (Evidence attached).
- Department of Civil and Materials Engineering (CME), University of Illinois at Chicago, April 2011.
- Department of Architectural Engineering, University of Nebraska-Lincoln, May 2008.
- Department of Maritime Systems Engineering, Texas A&M University, Galveston, April 2008.
- Reliability and Risk Analysis Seminars, Department of Civil Engineering, Texas A&M University, College Station, Jan 2008.

- ABS (American Bureau of Shipping), Houston, TX, Jan 2008.

DOCTORAL & PREVIOUS RESEARCH EXPERIENCES

TEES (Texas Engineering Experiment Station), Texas A&M University College Station, TX

Research Assistant,   Sep 2003~Dec 2007

- ***Fragility Increment Functions of Deteriorating RC Bridge (Choe et al. 2010)***
 Developed fragility increment functions: Modeled the increased deformation and shear fragilities of deteriorating reinforced concrete (RC) bridge columns during their service life subject to seismic excitations as functions of time. Applied to various environmental and material conditions by means of controlling parameters that correspond to the specific condition. Obtained the fragility of a deteriorated column for each mode of failure at any given time by multiplying the initial fragility of the pristine/non-deteriorated column by the corresponding function.

- ***Seismic Reliability / Time-Varient Probabilistic Models of the Seismic Demand for Deteriorating Highway Bridges.*(Choe et al. 2009)**
Developed probabilistic models for the seismic demand of reinforced concrete bridges subject to deteriorations. Extended currently available probabilistic models for pristine bridges with a probabilistic model for time-dependent chloride-induced corrosion. In particular, the models are developed for deformation and shear force demands. Obtained life-cycle seismic fragility estimates of bridges during their service life, by combining with existing capacity models. Applied to bridges with different combinations of chloride exposure condition, environmental oxygen availability, water-to-cement ratios, and curing conditions.

- ***Time-variant Probabilistic Structural Capacity Model subject to Corrosion for Reinforced Concrete (RC) Highway Bridge. (Choe et al. 2008)***
Developed life-cycle drift and shear force capacity models for deteriorating reinforced concrete (RC) bridge columns. Merged between a probabilistic model for chloride-induced corrosion, a time-dependent corrosion rate, and previously developed probabilistic models for drift and shear force capacity of pristine (undamaged) RC columns. Obtained fragility estimates for an example corroding column by applying the developed models at given shear and drift demands. Applied for different combinations of chloride exposure condition, environmental oxygen availability, water-to-cement ratios, and curing conditions. Applicable to both existing and new RC columns.

- ***Closed-Form Fragility Estimates and Bayesian Updating (Choe et al. 2007)***
Developed a simple closed-form formulation to estimate the fragility of RC columns. Estimate the conditional probability of failure of an example column for given shear and deformation demands, using the formulation. Carried out a sensitivity analysis to identify to which parameters the reliability of the example column is most sensitive. A Bayesian procedure is used to update existing probabilistic models with new data.

Ewha Women's University, Korea   Jan 2002~ Aug 2002

Researcher, Structural Lab., Architectural Engineering

- Prediction of Life-cycle for RC structure

Inha University, Korea

Research Assistant, Structural Analysis Lab., Architectural Engineering   Mar 2001~Jan 2002

- Analysis of nonlinear-chaotic behaviors of structural elements subject to earthquakes
- Chaos control of seismic response

TEACHING

Assistant Professor, Department of Civil Engineering   Jan 2021~ Current

New Mexico State University

Courses Taught:

- *Undergraduate*: Artificial Intelligence for Civil Engineers (CE490); Mechanics and Materials (CE301); Steel Design (CE444)

- *Special Topic (graduate, new course development)*: Artificial Intelligence for Civil Engineers: I. Machine Learning (CE 498/CE596); II. Deep Learning
- *Graduate*: Structural Dynamics (CE 571); Finite Element Analyses

Assistant Professor, Department of Civil and Environmental Engineering   Aug 2013~ Aug 2020
Prairie View A&M University

Courses Taught (9 courses):

- *Undergraduate*: Engineering Mechanics I: Statics, Engineering Mechanics II: Dynamics, Statics & Dynamics, Mechanics and Materials, Emerging Issue in Civil Engineering (Sustainability), Structural Analysis, Steel Design and Lab , Finite Element Analysis
- *Graduate:* Finite Element Analysis; Applied Reliability Engineering; Applied Computational Data Science in Civil Engineering I: Machine Learning; II: Deep Learning

New Course Development (5 courses development)

- *Applied Computational Data Science in Civil Engineering I: Machine Learning* (GNEG 5193, in Spring 2020)
- Applied Reliability Engineering (GNEG5193) developed & offered 2 semesters
- Finite Element Analysis (CVEG5173) developed & offered 3 semesters
- Materials and Dynamics Lab (CVEG 2061) developed & offered 2 semesters
- Structural Systems III (ARCH5483) developed & offered 1 semester.

Honor: 2018 ASCE ExCEEd teaching fellow.

Adjunct Professor, Department of Civil and Environmental Eng.   Fall 2007, 2011~May 2013

Part-time (while in industry) & Full-time, Prairie View A&M University (PVAMU)
Courses Taught: Engineering Mechanics I : Statics (CVEG2043), Engineering Mechanics II: Dynamics (CVEG2053), Statics & Dynamics (CVEG2454), Mechanics and Materials (CVEG2063), & Finite Element Analysis (CVEG4103 & GNEG5173)

PROFESSIONAL EXPERIENCES

INDUSTRIAL EXPERIENCES

MMI Engineering, a GEOSYNTEC Company, Houston, TX   Jan 2008 ~ May 2012

Senior Staff Engineer,

- Blast-Resistant Structures: Structural analysis/design of blast walls, & modular buildings including projects at the following facilities (including Steel & RC structures):
  - Role : Primary engineer –design, analysis & performed FEA & writing project reports with team.
  - ✓ Projects: BP Cherry Point, Blaine, WA ; BP, North Slope, AK; BP Toledo, Blaine, WA; ConocoPhillips, Ferndale, Washington; ConocoPhillips Refinery, Billings, Montana; ENGlobal Engineering, Port Arthur, Texas ; ExxonMobil Singgapore ; Hunt Oil Refinery, Tuscaloosa, Alabama ; ICM Afghanistan (Canadian Dept of State) ; LDH Energy, Geismar, LA ; Marathon Catlettsburg, Kentucky ; Valero Benicia Refinery, Benicia, California ; Valero Corpus Christi, TX ; Valero Memphis, TN
- AP 1000 Nuclear Power Plant, WESTINGHOUSE Electric Company
  - ✓ Project : CA Modules: Detailed Structural Analysis
- GLNG Plant Project, Queensland, Australia, SIEMENS-BECHTEL
  - Role : Primary engineer – performed FEA & writing project reports.
  - ✓ Project1: Compressor Substation: Prefabricated Powerhouse Structural Design under Blast Loadings & Sea Transportation and Operation Loadings :
  - ✓ Project 2: Main Substation: Prefabricated Powerhouse Structural Design under Blast Loadings & Sea Transportation and Operation Loadings
- Research projects - Offshore Wind Turbine structures:
  - Role: Performed the most of reliability analyses involved in the projects.
  - ✓ Title: Verification of Offshore Wind Turbine Certification Criteria., by American Bureau of Shipping(ABS)
- Risk analysis : United States Coast Guard (USCG)
  - Role: Perform the vessel collision analysis & writing part of report.

   ✓ Title: Independent Risk Assessment for Safe Harbor LNG Deepwater Port.
- Developed In-house softwares
   - ✓ Developed, updated, and maintained Pre/post-Processor for ABAQUS Standard/CAE

SERVICES & ACTIVITIES

UNIVERSITY SERVICES

Service to the Department of Civil and Environmental Engineering

- Faculty advisor, ASCE Student Chapter at NMSU (2022~current).
- Graduate admission coordinator, Civil Engineering, NMSU (2022~current)
- Establishment of new Ph.D. qualifying exam procedure, Civil Engineering, NMSU (2021)
- Faculty Search Committee, Civil Engineering, NMSU (2021,2022, & 2023)
- Department curriculum committee (2022-2024)
- Department ChatGPT committee (2022-2024)
- Faculty advisor, Chi Epsilon student group at Civil Engineering, PVAMU (2013~2020).
- Associate faculty advisor, ASCE Student Chapter at PVAMU, (2013~2015).
- Freshman registration faculty advisor for summer 2017 representing Civil and Environmental Engineering.
- Initiation of Wind Energy Seminar Series, Department of Civil and Environmental Eng. PVAMU
- Served as a committee member for online course transfer policy at the Department of Civil and Environmental Eng .
- Participating on Panther day, High school day, and other University recruiting events through 2013~.
- Student research advising: 13 Master's students completed. 8 Undergraduate research supervised.
- Undergraduate Student Advising: Degree plan advising & Resume correction 100+ students.

Service to the College of Engineering

- Department Head search committee, 2022 Civil Engineering, NMSU
- Faculty advisor, Early Pathway, Minority Program at Purdue Univ., for College of Engineering PVMAU (2016~ 2020)
- Engineering freshman: CE^{2}I module development & offers
   - Transportation Session: CE^{2}I, Roy G. Perry College of Engineering, PVAMU (2018 Summer)
   - Renewable Energy Session: CE^{2}I, Roy G. Perry College of Engineering, PVAMU (2018 Summer)
- Industry Day of Offshore Wind Energy, CEES & TEES. PVAMU, May 2018
- "What is a graduate school?": graduate recruiting material development and presentations.

Service to University

- Serve as a search committee of CIO (Chief Information Officer) at PVAMU (2019)
- Faculty Senate, PVAMU (2018~ 2020)

PROFESSIONAL SERVICES

- ASCE(American Society of Civil Engineers)/SEI (Structural Engineering Institute) Committee Member: Fire Protection: til 2022
- ASCE/SEI Tech Committee Member: Tech Council on Life-Cycle Performance, Safety, Reliability: Task Group 3. Risk Assessment and Risk-Based Decision Making: til 2022
- AWEA (American Wind Energy Association) Standard committee, Subcommittee of Structure, 2019~ .

PROPOSAL & JOURNAL REVIEW SERVICE

- Research Proposal Reviewer: National Science Foundation (2022~ current); Department of Energy (2022~ current)
- Journal Reviewer, Reliability Engineering & System Safety, Elsevier (2016~); Renewable Energy (2022~); Engineering Applications of Artificial Intelligence, Elsevier (2024~); Engineering Structures, Elsevier (2015~);Journal of Infrastructure Systems, ASCE (2013~); Journal of Bridge Engineering, ASCE (2014~); Journal of Structural Engineering, ASCE (2011~) ; Natural Hazards Review (2016~); Associate Editor, Journal of Structural Integrity and Maintenance, Taylor and Francis (2016~2018)

PROFESSIONAL DEVELOPMENT & TRAINING

- NSF CAREER Workshop CMMI, March 2022.
- Machine Learning and Frontera Institute TAAC: (Workshop) Austin 13-15, TX, Aug 2019
- NHERI: National Hazards Engineering Research Infrastructures, Summer Institute, San Antonio, TX, Jun 2019
- AI Academy- IBM, Training for course development and teaching for Artificial Intelligence, Prairie View A&M University TX, February 2019
- ASCE ExCEEd Teaching workshop, West Point, NY, July 2018
- TranSET, Development, Training, Education, and Implementation of Low-cost Sensing Technologies for Bridge Structural Health Monitoring (SHM), Fortworth, TX, April 2018.
- NSF Teaching workshop University of Texas at El Paso, July 2017
- NSF Day at Texas Tech, TX, May 20th, 2015.
- AISC Educator Workshop, Chicago, IL, Aug 5-6th, 2015.
- Active Learning Teaching Workshop, North West Center, PVAMU, May 26-27, 2015, Instructor: Michael J. Prince.
- Writing workshop, Prairie View A&M University, June 2014.
- Thurgood Marshall College Fund (TMCF) MUPI, Atlanta, April 2014.
- NSF CAREER Workshop, March 2014.
- Professional Training - Offshore Structure 2009 : 10 weeks

AWARDS

- 2018 ASCE ExCEEd Teaching Fellow
- Department Fellowship, Zachry Department of Civil Engineering, Texas A&M University: Spring, 2004 and Spring, 2005; Recognition for Journal Publications, Zachry Department of Civil Engineering, Texas A&M University 2006.
- Full-ride scholarship. honor student, Inha University, South Korea: 1997, 1998 and 1999.

Licenses & memberships

- Professional Engineer License: Texas PE #134247 ; Member of ASCE (American Society of Civil Engineers); Member of AISC (American Institute of Steel Construction); Member of TRB; Member of AWEA (American Wind Energy Association); Member of IABMAS; Korea National License of Architectural Engineer;

Employment Status

- U.S. Citizen