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

Assistant Professor, Dept. of Civil Eng., New Mexico State University.
Tel. 575-646-1167 (O), email. dchoe@nmsu.edu

TEACHING

- 2018 ASCE ExCEEd Teaching Fellow
- 4.5 year of Industrial Experiences.
- Professional Engineering (PE) licensed in Texas
- Seven (8) years teaching experiences at Minority Serving Institutions.
- Five (4) New Course Developments

RESEARCH

- External grant: $5,439,500.00
  - NSF: $5,300,000.00 (2 awards).
  - US-DOT: $139,500.00 (3 awards)
- Research Area:
  - Resilience: Earthquakes, Blast, Hurricane, & Fire
  - Structural reliability: Probabilistic modeling
  - Artificial Intelligence: fundamental & application
- Peer-reviewed journal papers, a book chapter, and conferences

SERVICES

- Two (2) ASCE/SEI technical committees
- Structure Substandard committee, AWEA
- Journal services:15+ journals
- Faculty advisors for ASCE & Chi-Epsilon student chapter
- 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: Dr. Paolo Gardoni & Dr. 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

J2021~ present	Assistant Professor, Civil Engineering New Mexico State University, NM
2013~ 2020	Assistant Professor, Civil and Environmental Engineering Prairie View A&M University (PVAMU), TX
2012~ 2013	Adjunct Assistant Professor, PVAMU, TX
2008~ 2012	Senior Staff Engineer, MMI Engineering, Inc., Houston TX
2004~ 2007	Research Assistant, Zachary Department of Civil Engineering, Texas A&M University, College Station, TX

RESEARCH

RESEARCH INTEREST

- Machine learning/deep learning for reliability & uncertainty; sequence-based modeling; recurrent neural networks;
- Structural reliability: probabilistic modeling; Bayesian methods;
- Infrastructure resilience: earthquakes, blast/explosion, & hurricane; deterioration of structure/infrastructures;
- Applied to: bridges, steel buildings, & offshore wind turbine structures.

EXTERNAL RESEARCH GRANT AWARDED

- 2022-2024 (**PI**): NASA, Amount: $222,867.00. Titled: *NASA EPSCoR: Next Generation Additive Manufacturing for Space Applications.*
- 2022-2024: NASA (**Co-PI**) New Mexico Space Grant Consortium, Amount: $50,000. Titled: *Deep-learning enabled remaining life-cycle prediction of Environmental Control System of Space Vehicle.*
- 2023-2025 (**PI**): NASA, Amount: $150,000.00. Subaward: NSF CREST *Center for Energy & Environmental Sustainability*
- 2021-2023: National Science Foundation (NSF) # 2118586, Amount : $121,300 (3 years, extended 1 year)
  PI: D. Choe**;** Titled: Uncertainty Modeling, Probabilistic Models, and Life-cycle Reliability of Floating Offshore Wind Turbine
- 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*

- 2017-2021 National Science Foundation (NSF) (**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
- 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)

PEER-REVIEWED JOURNAL PUBLICATIONS

Choe, D.*., Li, Ruwei. (Submitted 2023). Artificial Intelligence-based Wildfire Prediction of New Mexico. Natural Hazard.

Choe, D.*., Koo, B. (Submitted 2023). Framework of Fragility Estimation for Performance-based Structural Design of Floating Offshore Wind Turbine Components. Probabilistic Engineering Mechanics.

Ramezani, M., **Choe, D.***., Rasheed, A. (Submitted 2023). Prediction of the mechanical properties of cementitious materials reinforced with carbon nanotubes: AI-based approach. Construction and Building Materials, 185, 113610.

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, 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.

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)

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.

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.

Chung, K., Yoo, H., & **Choe, D.** (2018). Ambient context-based modeling for health risk assessment using deep neural network. Journal of Ambient Intelligence and Humanized Computing, 1-9 (corresponding author)

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.

(JOURNALS IN PREPARATION)

Choe, D., Seismic Fragility Estimates of RC Columns via Sequence-Based Modeling of Deep Learning (Targeting Journal: Reliability Engineering & System Safety).

Choe, D. Newtson, C., Jauregui, D., Probabilistic Model and Design Recommendation of Dynamic Increase Factors for Concrete Compressive Strength (Targeting Journal: ACI Structural Journal).

Student**, Choe, D**., Jauregui, D., Performance Evaluation of Blast-Resistant Buildings under Fire loading (Targeting Journal: AISC).

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 PAPERS

Choe, D., Talor, G. (2020, Aug). Prediction of wind speed, potential wind power, & the associated uncertainties for offshore wind farm using Deep Learning, ASME Power Conference, 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.

DOCTORIAL & PREVIOUSE 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*: Mechanics and Materials (CE301), Fall 2021
- *Graduate*: Structural Dynamics (CE 571), Spring 2022

Assistant Professor, Department of Civil and Environmental Engineering Aug 2013~ Aug 2020

Prairie View A&M University (PVAMU)

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 Jun 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 Department of Civil and Environmental Engineering

- Establishment of new Ph.D. qualifying exam procedure, Civil Engineering, NMSU (2021)
- Faculty Search Committee, Civil Engineering, NMSU (2021)
- Faculty advisor, Chi Epsilon student group at Civil Engineering, PVAMU (2013~current).
- 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 Department of Civil and Environmental Eng (2013).
- 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

- Faculty advisor, Early Pathway, Minority Program at Purdue Univ., for College of Engineering PVMAU (2016~ current)
- Engineering freshman: CE^2I module development & offers
    - Transportation Session: CE^2I, Roy G. Perry College of Engineering, PVAMU (2018 Summer)
    - Renewable Energy Session: CE^2I, 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~ current)

PROFESSIONAL SERVICES

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

JOURNAL REVIEWER & BOARD MEMBER

- Journal Reviewer, Journal of Structural Engineering, ASCE (2011~)
- Journal Reviewer, Journal of Infrastructure Systems, ASCE (2013~)
- Journal Reviewer, Journal of Bridge Engineering, ASCE (2014~)
- Journal Reviewer, Engineering Structures, Elsevier (2015~)
- Journal Reviewer, Structure and Infrastructure Engineering, Taylor and Francis (2015~)
- Journal Reviewer, Reliability Engineering & System Safety, Elsevier (2016~)
- Journal Reviewer, Natural Hazards Review (2016~)
- Associate Editor, Journal of Structural Integrity and Maintenance, Taylor and Francis (2016~2018)

PRESENTATIONS & INVITED TALK

- 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, 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.

PROFESSIONAL DEVELOPMENT & TRAINING

- Machine Learning and Frontera Institute TAAC: Texas Advanced Computing Center, Austin 13-15, TX, Aug 2019
- AWEA (American Wind Energy Association) conference, Houston, TX May 22-23 2019
- NHERI: National Hazards Engineering Research Infrastructures, Summer Institute, San Antonio, TX, Jun 2019
- OTC (Offshore Technology Conference), Houston, TX, May 2019
- TranSET conference, San Antonio, TX, April 2019
- American Society of Civil Engineers (ASCE), SEI (Structural Engineering Institute) Structures Congress, Orlando, FL, April 2019
- ASCE ExCEEd Teaching workshop, West Point, NY, July 2018
- OTC (Offshore Technology Conference), Houston, TX, May 2017
- TranSET, Development, Training, Education, and Implementation of Low-cost Sensing Technologies for Bridge Structural Health Monitoring (SHM), Fortworth, TX, April 2018.
- NACE Corrosion International 2018, Pheonix, AZ April 2018.
- American Society of Civil Engineers (ASCE), SEI (Structural Engineering Institute) Conference, Dallas, TX, April 2018.
- American Society of Civil Engineers (ASCE), International Conference on Sustainable Infrastructure (ICSI) 2017, Brooklyn, NY, Oct 2017.
- NSF Teaching workshop University of Texas at El Paso, July 2017
- NASCC: The Steel Conference: registered as a live streaming user, April 2017.
- OTC (Offshore Technology Conference), Houston, TX, May 2017
- American Society of Civil Engineers (ASCE), SEI (Structural Engineering Institute) Conference, Denver, CO, April 2017.
- 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
- International Symposium on Reliability Engineering and Rist Management (ISRERM), Seoul, Korea, Aug 2016.
- NASCC: The Steel Conference: registered as a live streaming user, April 2016.
- American Society of Civil Engineers (ASCE), GEO-SEI (Structural Engineering Institute) Conference, Phoenix, AZ, Feb 2016.
- ASCE, SEI Structure Congress, Portland, OR, April 2015.
- NSF Day at Texas Tech, TX, May 20th, 2015.
- OTC (Offshore Technology Conference), Houston, TX, May 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.
- International Conference on Multi-hazard Approaches to Civil Infrastructure Engineering (ICMAE), Chicago, IL-June26-27, 2014.
- OTC (Offshore Technology Conference), 2014.
- Professional Training - Offshore Structure (through MMI Engineering) : 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 of Journal Publications, Zachry Department of Civil Engineering, Texas A&M University 2006.
- Full-scholarship honor student, Inha University, South Korea: 1997, 1998 and 1999.

Licenses & memberships

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