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FOKRUDDIN AHMAD, *E.I.T*

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EDUCATION:

Master of Science in Civil Engineering   **December 2015**
University of North Dakota (UND), ND   CGPA 4.0 out of 4.0
Graduate Research and Teaching Assistant
Thesis: Local Buckling Restraining Behavior of Concrete-filled Steel Tubular Column under Seismic Loads

Bachelor of Science in Civil Engineering   **April 2012**
Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh   CGPA 3.56 out of 4.0
Thesis: Performance Evaluation of FRP Retrofitted Buildings to Remove Seismic Inadequacies

RESEARCH EXPERIENCES:

University of North Dakota, ND   **September 2013-Present**
- Cyclic Elastoplastic behavior of Steel and Composite Bridge pier, using ABAQUS
- Cyclic behavior of Concrete Filled Tubular column, using ABAQUS
- Buckling behavior of thin-walled steel member
- Writing user subroutine in Fortran for a constitutive model
- Seismic response of wind turbine using ANSYS

Bangladesh University of Engineering & Technology, Bangladesh   **January 2011 – April 2012**
- Performance analysis and Retrofitting of:
  Soft story building,   Insufficiently reinforced building,   Historic masonry structure,
  Structures without considering earthquake provisions.
- Improvement in Seismic performance due to Retrofitting
- Surface mounted FRP strip.

PROJECT WORKS:

Buckling Behavior of Concrete-Filled Tube   **August 2014- Present**
Investigator: *Dr. I.H.P Mamaghani (University of North Dakota)*
               Dr. Benjamin Schafer (John Hopkins University)

- Modeling and analyzing the buckling behavior of concrete-filled bridge piers under cyclic load (ABAQUS)
- Establish seismic design equations for Concrete-filled tube by extensive numerical simulations

Seismic Response of Wind Turbine   **May 2014- August 2014**
Investigator: *Dr. Sukhvarsh Jerath (University of North Dakota)*

- Modeled a Wind Turbine to analyze the seismic response of 3 real earthquake in time domain (ANSYS)
- Modified the seismic response-spectrum in design manual based on the extensive simulations

Stability of Thin-Walled Steel Structure   **August 2013-May 2014**
Investigator: *Dr. I.H.P Mamaghani (University of North Dakota)*
               Dr. Roberto Leon (Virginia Tech)

- Analyzed the behavior of steel bridge piers subjected to cyclic multidirectional loading (ABAQUS, ANSYS)
- Wrote a user defined subroutine to consider the steel yield plateau in analysis (Fortran, Python)

Performance Evaluation of Retrofitted Buildings   **January 2011-April 2012**
Advisor: *Dr. Tahsin Reza Hossain (BUET, Dhaka)*

- Performance analysis of: 1. Soft-story buildings, 2.Insufficiently reinforced column and, 3. Masonry structure
- Analyzed the improvement in seismic performance due to FRP (strip and wrap) based retrofitting (SAP2000)

RELEVENT SKILLS:

- Analysis Software: ABAQUS, ANSYS, SAP2000
- Design Software   AutoCAD, ETABS, SOLIDWORKS
- Programming Language: Fortran, C, C++, Python
- Official Software: MS Word, MS Excel, Power Point, LaTex

RELEVANT COURSEWORK:

University of North Dakota (UND), ND
- Structural Stability
- Structural Mechanics
- Advanced Steel Design
- Intro to Theory of Plasticity
- Advanced Finite Element Analysis
- Vibration Analysis

Bangladesh University of Engineering & Technology, Bangladesh
- Mechanics of Solid
- Structural Analysis
- Structural Dynamics
- Computer Programming
- Design of Steel Structure
- Design of Concrete Structure
- Pre-stressed Concrete
- Numerical Analysis
- Differential and Integral Calculus
- Differential Equations
- Matrix and Vector Analysis
- Probability and Statistics

PUBLICATIONS:

- Mamaghani, I.H.P., **Ahmad, F.**, Dorose, B. (2014). *Cyclic Large Displacement Analysis of Steel Tubular Bridge Piers under Combined Axial and Bidirectional Lateral Loading*, International Journal of Applied Science and Technology (IJAST), Vol. 4, No. 6, November, PP. 38-47.

- Mamaghani, I.H.P., **Ahmad, F.**, Dorose, B. (2015). *Stability Evaluation of Thin-Walled steel Tubular Bridge Piers under Cyclic Multidirectional Loading*, Transportation Research Board, TRB 94th Annual Meeting, January 11-15, 2015, Washington, D.C., Paper ID: 15-4359.

- Mamaghani, I.H.P., Dorose, B., **Ahmad, F.** (2015). *Cyclic Inelastic Finite Element Analysis and Ductility Evaluation of Steel Braced Frames*, ASCE, 2015 Structures Congress, Portland, OR., April 23-25, 2015, Paper ID: 250.

- Mamaghani, I.H.P., Wesley, K., **Ahmad, F.** (2014). *Cyclic Elastoplastic Analysis and Ductility Evaluation of Thin-walled Steel Box Columns*, 4th International Structural Specialty Conference, Halifax-Canada, May 28-31, Paper ID: CST-165.

- **Ahmad, F.**, and Mamaghani, I.H.P., (2014), "*Ductility Evaluation of Steel Bridge Piers with Pipe Sections*", ND EPSCoR/IDeA State Conference.

- Mamaghani, I.H.P., **Ahmad, F.,** and Dorose, B., (Submitted), "*Strength and Ductility Evaluation of Thin-Walled Steel Tubular Columns under Cyclic Multidirectional Loading*", Transportation Research Board (TRB).

- Mamaghani, I.H.P., **Ahmad, F.,** and Dorose, B., (Submitted), " *Enhanced Seismic and Local Buckling Restraining Behavior of Concrete-filled Steel Tubular (CFST) Columns* ", ATC-SEI 2ndConference on Improving the Seismic Performance of Existing Buildings and Other Structures, December 10-12, 2015.

WORK EXPERIENCES:

Graduate Teaching and Research Assistant   August 2013-Present
University of North Dakota, Grand Forks
- Grading class assignments and quizzes, proctoring, assisting students in assignments
- Courses as TA: Engineering Mechanics (ENG 201), Reinforced Concrete(CE 453) and, Steel Structure(CE 451)
- Conducting research on the stability and buckling behavior of thin-walled member

Summer Research Professorship   June 2015- August 2015
University of North Dakota, Grand Forks
- Will work in collaboration on Concrete Filled Tube testing as a full time research scholar.
- Will supervise undergraduate student in CE-201 (Engineering Mechanics)

Lecturer, Civil Engineering Dept.   September 2012-August 2013
Stamford University, Bangladesh
- Delivered Lecture on Structural Mechanics, RC, Pre-stressed RC, Structural Analysis, C++ and, ETABS
- Graded exam scripts and preparing grade sheet

Junior Design Engineer (Structural)   April 2012 – September 2012
MEL Consortium, Bangladesh
- Partially designed a 6 story residential building and a Textile warehouse (AutoCAD, SOLIDWORKS)
- Monitored the construction work of a building
- Developed a program for roof, beam and column reinforcement calculation (Excel, C++)

AWARDS:

- Achieved Graduate school "Summer Research Professorship". (UND)
- Achieved Dean's List Scholarship for academic excellence.
- Achieved certificate from Notre Dame College for 100% attendance.
- Achieved Government Scholarship for H.S.C. (higher secondary school) result.
- Achieved Government Scholarship for S.S.C. (secondary school) result.
- Achieved "Junior Government Scholarship" by Bangladesh Government.
- Achieved "Primary Government Scholarship" by Bangladesh Government.

LEADERSHIP EXPERIENCES:

- Organizing member of Bangladesh Cultural Night, UND, Grand Forks (Two times)
- Secretary of Extracurricular and Orientation Committee, Stamford University, Bangladesh
- Treasurer of GSC, BUET (regional student organization)
- Convener of Hall Rag Committee, Titumir Hall, BUET.
- Organizing member of Central Rag Committee, BUET.
- Organizer of Rag'06 Table Tennis Tournament, BUET.
- Organizing Member for BUET Career Club (BCC).

VOLUNTARY EXPERIENCES:

- Set- up coordinator in FEL championship tournament, 2014
- Peer mentoring, UND (Helping international students)
- Volunteering at International Conference, Alerus Centre, ND.
- Volunteering at "River Skating Competition", Grand Forks, ND
- Member And Donor of Badhon (Blood Donation Organization),BUET.

SOCIETY MEMBERSHIP:

- American Society of Civil Engineers (ASCE), UND Chapter
- Institute of Engineers, Bangladesh (IEB)

PROFESSIONAL EXAM:

- Engineer-in-Trainee Certification (North Dakota, USA)