Sudan Pandey

pdy.sdn14@gmail.com

A master's degree graduate with research and employment experience. Looking for a position of Ph.D. in structural engineering. I have theoretical knowledge, skills, and research ability to conduct independent research. I want to do research in the Structural and Earthquake engineering field. Particularly, I am interested in the performance-based design, seismic and wind-resistant structures, simplified seismic analysis procedures, energy dissipating devices.

EDUCATION

PhD, Structural Engineering **2020-Present**
4.0 GPa
Research Work
- Castinging

Master of Engineering, Structural Engineering **2015-2017**
Asian Institute of Technology, Thailand
4.0 GPA with Excellent Thesis, Ranked 1st
Master Thesis: "Development of Modal Hysteretic Model for the Seismic Response Analysis of Tall Buildings with RC Shear Walls"
- Developed a new hysteretic model to represent the modal nonlinear behavior of the high-rise RC core wall buildings using Perform-3d, C++ and Open Sees
- Validated the proposed model using different standard loading protocols
- Applied new hysteresis to predict the nonlinear response of high-rise buildings using Uncoupled Modal Response History Analysis (UMRHA)

Committee: Prof. Pennung Warnitchai (Chair), Dr.Naveed Anwar, Dr. Punchet Thammarak

Special Study Research: "Equivalent Linear Model for a Nonlinear SDOF System with Flag Shaped Hysteretic Behavior", Advisor: Prof. Pennung Warnitchai
- Developed equivalent linear model for flag shaped hysteresis using three equivalent linearization approaches: analytical, one dimensional optimization (using secant stiffness), and two-dimensional optimization (optimization of both damping and stiffness)

Major Courses: Earthquake & wind engineering, structural dynamics, finite element analysis, tall buildings, computer method of structural analysis, advanced concrete structure etc.

Projects: Led a group to analyze and design a high-rise building using ETABS based on ACI and ASCE, analyzed billboard for code-based wind load in SAP 2000, analyzed Deep beam in Vector2-FormWorks and validated with experimental result

Lab works: Developed the optimum mix design for fiber reinforced concrete and performed different tests (bending resistance test, tensile and compressive test etc.), evaluated flexural behavior of the reinforced concrete beam

Bachelor's Degree in Civil Engineering 2010-2014
Sagarmatha Engineering College, Tribhuvan University
Graduated with distinction (82.68%), Ranked 2nd among all the students (approx. 1313) in bachelor's degree civil engineering program of Tribhuvan University

Major courses: Design of RCC and steel structures, structural dynamics, earthquake engineering, engineering mathematics, theory of structures, strength of materials and applied mechanics
Final Year Project: Led a group to design a 50 m span Incrementally Prestressed Concrete (IPC) Girder Bridge manually in Excel

CONFERENCE PAPER

Pandey S., Fleischman R., Sause R., Ricles J., Uang CM. (2022). Behavior of Seismic Collectors in Steel Building Structures. 12th National Conference on Earthquake Engineering.

Najam, F., Joshi S., Pandey S., Vasanthapragash, N., & Warnitchai, P. (2020). A Response Modification Analysis (RMA) Procedure to Determine Nonlinear Seismic Demands of High-Rise RC Shear Wall Buildings. 17th World Conference on Earthquake Engineering, 17WCEE.

Pandey, S., Warnitchai, P., Vasanthapragash, N., & Najam, F. (2017). Development of modal hysteretic model for the seismic response analysis of tall buildings with RC shear wall. In Proceedings of the 7th Asia Conference on Earthquake Engineering.

POSTER PRESENTATION

Pandey S, Wind Tunnel Testing, 8th Joint Student Seminar on Civil Infrastructure, 12-13 September 2019, Asian Institute of Technology, Thailand

EMPLOYMENT

Senior Engineer (Structure and Wind), AIT Solutions, AIT, Thailand   August 2017 – July 2020
Performance based seismic design
- Reviewed the structural system and developed the performance-based evaluation criteria including seismic design methodology, seismic performance goals, acceptance criteria, mathematical modeling and simulation based on various standards and guidelines,
- Carried out performance based seismic evaluation of two high-rise buildings: conducted modeling, analysis, and evaluation based on the state of the art of PBD with the help of guidelines like TBI 2017, LATBSDC 2017, NIST, PEER/ATC, ASCE 41-17 etc., and various research papers and provided recommendation based on the results
- Performed code-based design review of buildings based on ACI 318-08 and ASCE 7-16
- Developed concrete models (different level of confinement) to be applied in Perform-3D based on Razvi's confinement model

Wind Engineering

- Conducted three different type of wind tunnel tests: High Frequency Force Balance (HFFB) using rigid model and force sensor, Cladding pressure test using rigid model and pressure sensors, and Pedestrian level wind speed test using Irwin probes
- Combined wind tunnel test data with local climate to assess the structural and serviceability design loads on the structure, local pressure for cladding design, and pedestrian level wind for pedestrian wind comfort study
- Involved in development of post processing software for wind loadings in MATLAB applying theory of random vibration, sector method, and up-crossing method.
- Conducted terrain analysis to obtain the realistic wind profile at the building site referring ESDU 01008

Student Assistantship   **December 2015 – January 2016**
AIT Solutions, AIT, Thailand
- Helped Dr. Naveed by preparing numerical examples for Structural Cross Sections: Analysis and Design authored by Naveed Anwar and Fawad Najam

Civil Engineer   **March 2015 – July 2015**
Environment and Resource Management Consultant (P.) Ltd. Kathmandu, Nepal
- Surveyed around 25 highway bridges to assess the condition of them while working in the Government of Nepal's project of bridge rehabilitation

SCHOLARSHIPS AND AWARDS
- Received Nepal Bidhya Bhusan 'Kha' – Government of Nepal's highest award conferred for academic excellence in master's degree, 2018
- Awarded with "His Majesty The King's Scholarships" for master's degree in structural engineering at AIT, 2015-2017
- Awarded with regular scholarship by Tribhuvan University for bachelor's degree in civil engineering, 2010-2014

TECHNICAL SKILLS
- Software: Perform-3D, ETABS, SAP2000, SAFE, Rhino-3D, AutoCAD, COMSOL
- Languages and Framework: MATLAB, Python, C++, OpenSees

PROFESSIONAL ASSOCIATION
- Registered Civil Engineer with Regd. No. 11292 "Civil" "A" Category

VOLUNTEERING
AIT Student Union Volunteer   **2015-2016**
- Volunteered on various student union committees and involved on various programs like sports activities, tree plantation, entertainment activities etc.

Nepal Engineering Association Volunteer   **April 2015 – June 2015**
- Rapid Visual Assessment of Buildings after Gorkha earthquake 2015, Nepal

EXTRACURRICULAR ACTIVITIES

- Participants and winner in different team sports in AIT sports tournament
- Member of AIT-Nepali Men's futsal, football and volleyball team

REFERENCE
Dr. Robert B. Fleischman, Professor
University of Arizona, Tucson, Arizona, USA
rfleish@arizona.edu

Dr. Robert B. Fleischman, Professor
University of Arizona, Tucson, Arizona, USA
rfleish@arizona.edu

Dr. Robert B. Fleischman, Professor
University of Arizona, Tucson, Arizona, USA
rfleish@arizona.edu

Dr. Pennung Warnitchai, Professor ,
Asian Institute of Technology, Thailand
pennung.ait@gmail.com

Dr. Naveed Anwar,
Vice President of Knowledge Transfer
Asian Institute of Technology, Thailand
naveed@ait.ac.th

Dr. Punchet Thammarak, Senior Lecturer
Asian Institute of Technology, Thailand
punchet.thammarak@gmail.com

Dr. Thanakorn Pheeraphan, Associate
Professor, Royal Thai Air force Academy,
Thailand, petevmi91@yahoo.com

Thaung Htut Aung, Director, AIT Solutions
Asian Institute of Technology, Thailand
thaunghtutaung@ait.ac.th