

Sina Mehdinia

Ph.D. Student and Graduate Research Assistant

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EDUCATION

Portland State University

Ph.D. in Civil Engineering - Structures, GPA: 3.96

Portland, OR

2018 – present

University of Tehran

MS in Civil Engineering - Earthquake Engineering, GPA: 3.88

Tehran, IRAN

2015 – 2018

Babol Noshirvani University of Technology

BS in Civil Engineering

Babol, IRAN

2009 – 2015

National Organization for Development of Exceptional Talents

High-school diploma in mathematics and physics

Babol, IRAN

2009

EXPERIENCE

Kaggle Contributor

Kaggle

2019 – Present

US

- Top 5% of more than 3000 competitors in an ongoing data science competition –Mechanism of Action Prediction.

Graduate Research Assistant

Portland State University

Sept 2018 – Present

Portland, OR

- Developing a comprehensive framework with deep neural networks to automate non-destructive testing using microwave signals.
- Developing a comprehensive methodology and proposing an algorithm to process radar and ultrasonic data as a diagnostic imaging tool for structural concrete.
- Performing ultrasonic data analysis for early-detection of ASR deterioration in concrete using full-waveform ultrasonic monitoring.

Graduate Teaching Assistant

Portland State University

Sept 2018 – Dec 2018

Portland, OR

- Assisted undergraduate students with holding office hours to review materials and work on assignments, for the course elementary structural analysis.
- Instructed MATLAB programming for the course structural dynamics.

Graduate student

University of Tehran

Sept 2015 – July 2018

Tehran, IRAN

- Developed an unsupervised machine learning model to perform continuous structural health monitoring on vibration data (master's thesis).

PUBLICATIONS

- **S. Mehdinia**, T. Schumacher, X. Song, E. Wan. “A comprehensive methodology and quality metrics for fusion of radar and ultrasound images of structural concrete” *Journal of Nondestructive evaluation* (under review)
- **S. Mehdinia**, K.S.T. Chopperla, A. Hafiz, T. Schumacher, J.H. Ideker “Early-age detection of ASR in laboratory samples using ultrasonic coda wave monitoring” *16th International Conference on Alkali Aggregate Reaction in Concrete (ICAAAR)*, 2021 Jun, Lisboa, Portugal (accepted)
- **S. Mehdinia**, Y. Hamishebahar, M. Bitaraf, A.K. Ghorbani-Tanha, M. Rahimian “Structural damage detection using K-means clustering algorithm under unknown environmental and operational conditions” *7th International Conference on Acoustics and Vibration*, 2017, Nov, Tehran, IRAN.
- **S. Mehdinia**, Y. Hamishebahar, M. Bitaraf, A.K. Ghorbani-Tanha, M. Rahimian “Structural Damage Identification Using Statistical Moments and Multi-Objective Linear Regression of Vibration Time Series” *7th International Conference on Acoustics and Vibration*, 2017, Nov, Tehran, IRAN.

PRESENTATIONS

- **S. Mehdinia** “Enhanced imaging of structural concrete with a medical image fusion perspective” *The ACI Concrete Convention*, 2020 Oct, Virtual.
- **S. Mehdinia**, T. Schumacher, E. Wan, X. Song “Enhanced imaging of structural concrete through data fusion of ultrasonic and radar signals” *The ACI Concrete Convention and Exposition*, 2019 Oct, Cincinnati, Ohio.
- **S. Mehdinia**, T. Schumacher, E. Wan, X. Song “Diagnostic Imaging of Structural Concrete” *46th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE)*, 2019 July, Portland, Oregon.
- **S. Mehdinia**, T. Schumacher, E. Wan, X. Song “Diagnostic Imaging of Structural Concrete Using Ground Penetrating Radar and Ultrasonic Array” *Student Research Symposium at Portland State University*, 2019 July, Portland, Oregon.

EXTRA-CURRICULAR ACTIVITIES

International Student Mentor

June 2019 – June 2020

International Student Mentorship Program (ISMP) at Portland State University

Portland, OR

- Mentored more than ten international students in STEM fields
- Enhanced the experience of new international students at Portland State University in an inclusive diverse environment

Student Leader

Nov 2018 – Feb 2020

Student Activities and Leadership Program (SALP) at Portland State University

Portland, OR

- Organized several international cultural events at Portland State university with more than 500 attendees.

Innovation and Intellectual Property Researcher

Apr 2019 – Jun 2019

IIP Training Program at Portland State University

Portland, OR

- Performed product and market analysis for scientific patents at Portland State University

HONORS AND AWARDS

Outstanding Graduate Student

Jun 2020

Portland State University

Portland OR

- Award is given to the student who demonstrates through any combination of academic achievement, character, or presence as modeling the ideal Viking CEE graduate.

Laurels Graduate Award

Apr 2020

Portland State University

Portland OR

- The Award is instituted to provide recognition and financial support to the best and brightest students and to enhance enrollment diversity. The program provides an award to competitively selected, academically meritorious graduate degree students in all fields.

ACI-James Instruments Student Award for Research on NDT of Concrete

Feb 2020

American Concrete Institute (ACI)

US

- Best paper award for original research on nondestructive testing of concrete.

Intercultural Leadership Certificate

Fall 2019

Portland State University

Portland, OR

- For serving PSU by providing critical peer leadership and mentoring for international students

Certificate for Recognition of Excellence

Fall 2018, Fall 2019, and Winter 2019

Portland State University

Portland, OR

- In recognition of excellence in academic achievement and leadership

Top-selected Student in Iranian University Entrance Exam

Fall 2015

University of Tehran

Tehran, IRAN

- For ranking 60 (top 0.2%) at Iranian University Entrance Exam

TECHNICAL SKILLS

Python, Numpy, Pandas, Scikit learn, TensorFlow, Keras, PyTorch, OpenCV, MATLAB, C++, LaTeX, gprMax