دکتر هودین ملک زاده (Hoodean Malekzadeh Ph.D. , P.E.)

تحصیلات ، تخصص ها و سمت ها

کارشناسی ارشد و دکتری تخصصی مهندسی عمران – مهندسی زلزله

دستیار تحقیقاتی در پژوهشگاه بین المللی زلزله شناسی و مهندسی زلزله

مدرس دانشگاه

محقق حوزه ارزیابی لرزه ای وآسیب پذیری پل و سازه های شریان حیاتی

طراحی و نظارت عالیه و اجرای پروژه های فولادی و بتنی در استان تهران (نظام مهندسی استان تهران)

ناظر و مشاور علمی محتوای تخصصی مهندسی عمران (مقالات آموزشی و تحلیلی، ویدئوی آموزشی نرم افزارهای تخصصی)

نرم افزار های تخصصی:

آشنایی کامل و تخصصی به نرم افزار های SAP,CSI Bridge,ETABS,CIVIL3D,Auto Cad

آشنایی با زبان برنامه نویسی Python

آشنایی با نرم افزار OpenSees

عضویت ها:

- نظام مهندسی استان تهران
- عضو انجمن مهندسی زلزله ایرانIEEA
- عضو انجمن مهندسان عمران آمریکا ASCE
- انجمن مهندسان عمران کانادا CSCE

ارتباط:

LinkedIn

CURRICULUM VITAE

PERSONAL INFORMATION:

Name: **Hoodean Malekzadeh**
Address: Tehran, Tehran Province, Iran
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Research Gate: Hoodean Malekzadeh (researchgate.net)
ORCID: https://orcid.org/0000-0001-6873-640X
Academia:Hoodean Malekzadeh

SUMMARY:

- **I am a highly motivated researcher and Licensed Professional Structural Engineer (P.E.) & (S.E.) who can be trusted, conduct several research projects independently, and always find the best solutions for the most complicated and demanding problems. It results in the publication of several papers and preparing others for submission.**
- **I am a cross-functional collaborator by merging solutions from Earthquake and Structural Engineering or construction supervision and management to get the best result for a problem. I have collaborated with several professors from Iran's highly respected Universities, including Islamic Azad University (IAU).**
- **Structural& Earthquake engineer with 5000+ hours of experience researching and structural programming. Experienced in nonlinear modeling and analysis of various structural systems, i.e., buildings and bridges with different seismic resistance systems.**

EDUCATIONAL HISTORY:

❖ **Ph.D. Degree in Earthquake Engineering from Islamic Azad University South Tehran branch, Technical and Engineering Faculty, Tehran, Iran (2016-2021)**

Dissertation Title: **A Study on the effects of various ground motion characteristics for developing a multi-variable bridge-specific vulnerability function with emphasis on near-field earthquakes.**

- **Supervisors**: Professor Mahmood Hosseini, Dr. Hassan Abbasi
- **Advisor:** Dr. Armin Aziminejad, Dr. Mohammadreza Adib Ramezani

1. Mahmood Hosseini - Google Scholar
2. Hassan Abbasi - Google Scholar
3. A. Aziminejad - Google Scholar

❖ **M.Sc. Degree in Earthquake Engineering from Islamic Azad University Science and Research Branch, Technical and Engineering Faculty, Tehran, Iran (2012-2015)**

Thesis Title: **Considering the Near-Field Effects to Determine the Parameters of an Attenuation relationship for Estimation of Vertical Ground Spectral Acceleration.**

Supervisor: Dr. Massoud Nekooei

- Masoud Nekooei - Google Scholar

❖ ***B.Sc. Degree*** **in Civil Engineering from Islamic Azad University (IAU)**

HONORS AND AWARDS:

✓ Top Rank in Islamic Azad university national entrance exam for Ph.D. admission (2016)
Ranked as the top student with a 4 /4 average for Ph.D. at Islamic Azad University South Tehran branch IAU-South Tehran Branch

- Awarded as the senior student with a 4/4 GPA in the following courses:

- Nonlinear Analysis of Structures & Dynamic of structures
- Special topics in earthquake Engineering
- Seismic Control of Structures (active & passive systems for energy dissipation)
- Risk Management
- Design & Analysis of Tall Buildings
- Seismic Design of Structures
  - ➢ Awarded as the top student with a 4/4 GPA at the Ph.D. Qualification (Written & Oral) exam.

PROFESSIONAL EXPERIENCES (Lecturer):

Teaching the following courses: (extracurricular courses & fundamental courses in Structural & Earthquake Engineering)

- Design of Steel Structures & Structural Loading
- Civil Engineering Softwares
- Bridge Engineering
- Design of Reinforce concrete structures
- Seismic Design of structures specialized course in bridge engineering
- Design of structures with ETABS (2015 version) and SAP
- Teaching English proficiency to Engineers
- Design & Time History Analyses of Steel Structures (specialized course in Tall buildings)

MEMBERSHIPS:

✓ Member of Iran Construction Engineering Organization (IRCEO), Tehran, Iran (Since 2015 to present).

http://www.irceo.net/
https://tceo.ir/portal/home/
Membership Number:10-3-0-108190

- Permission for building (supervision)& (execution & construction) & design
  - ➢ Design and construction of at least a dozen commercial and residential buildings in Tehran (from June 2017 until April 2022)

✓ Member of the Iranian Earthquake Engineering Association (IEEA), Iran (2016 to present). https:// www.ieea.ir/

✓ Member of American Society of Civil Engineers (ASCE), U.S.A., (Since 2020)

Membership ID: 000012282652 (ASCE.ORG)

RESEARCH INTERESTS:

- Evaluation of seismic behavior of structures using machine learning, with application on R.C. Bridges
- Seismic hazard analysis and risk management for lifeline structures
- Neural network simulation in Earthquake & structural engineering
- Probabilistic prediction of damages using reliability methods
- Life-cycle assessment of concrete bridges
- Reliability analysis using different sampling methods (Monte Carlo simulation)
- Finite element analysis of the engineering structures, especially the bridges
- Vibration control of bridges, applications of new technologies in damage mitigation
- Soil-bridge interaction and its effects on the Seismic behavior of structures, with a focus on bridges
- Effect of near-field earthquakes on seismic behavior of the structures, with application on highway bridges
- Effect of various and optimal intensity measures on seismic demand of structures, especially bridges
- Effect of earthquake characteristics and intensity measures on Energy-related demands in bridge structures and its effect on seismically induced damages
- Using Lasso regression and stepwise regression to identify optimal intensity measures for Seismic Assessment of Structures

- Performance-Based Seismic Assessment of highway bridges (Focusing on California bridge based on the design era)
- Developing a multi-variable vulnerability function to predict the critical demands and seismic response of R.C. highway bridges

SKILLS SUMMARY (Software - Programming & Proposal Writing):

- MATLAB (Sample written codes are available upon request)
- M.S.P. (Microsoft Project)
- OpenSees (Sample written codes are available upon request)
- CSI SAP, ETABS, CSI Bridge
- Statistical Analyses
- Artificial Neural Networks
- Microsoft Office: Word, Excel, PowerPoint
- Seismo Soft collection (SeismoSignal; SeismoMatch; SeismoSpect; SeismoSelect)
- Technical Writing
- Proposal writing
- Data collection & modeling
- Advanced regression methods (Written codes in **MATLAB** are available upon request)
- SPSS STATISTICA (stat soft.)
- Python

SKILLS SUMMARY (Structural &Earthquake Engineering - Personal)

- Five years of bridge design experience with a background in Concrete bridges, prestressed concrete bridges, and concrete and steel buildings.
- Thorough understanding and practical experience applying the AASHTO LRFD Bridge Design and Caltrans seismic design criteria (SDC) Specifications to transportation structures.
- Proficiency with structural and bridge analysis and design software
- Self-motivated with the ability to work autonomously
- Demonstrated ability to communicate effectively and work with others
- Design-Build project experience
- Project management experience
- Strong focus on client service
- Business development experience.
- Strong analytical skills and career path goal as project manager
- Good knowledge of building codes such as ASCE 7, AISC 360, ACI 318, FEMA 356, ASCE 41, FEMA P58, FEMA695
- Experienced in seismic design of steel and reinforced concrete structures.
- Experienced in seismic evaluation, rehabilitation, and retrofit of existing building structures.
- Experienced in the earthquake-resistant design of non-structural systems.
- Well-experienced in seismic design and assessment of highway bridges
- Experienced in Probabilistic seismic hazard and risk assessment and management for civil infrastructure
- E-learning activist

SELECTED COURSES AND PROJECTS: (MS.c &Ph.D. Top Grades)

Courses:

- Reliability Methods
- Risk Management
- Probabilistic Seismic Hazard Analysis and Deterministic Seismic Hazard analysis
- Nonlinear Analysis of Structures

- Dynamic of structures
- Finite Element Methods
- Theory of Elasticity
- Design of Steel Structures
- Nonlinear Analysis of Structures
- Design of Reinforced Concrete Structures
- Principles of Earthquake Engineering
- Design and Analysis of Tall buildings
- Soil Dynamics
- Rehabilitation of Structures
- Effect of Earthquakes on Special Structures

Projects:

- Modeling, analysis, and design of structures with professional software and respective regulations (**C.S.I. Bridge, SAP**, **ETABS**)
- Design and supervision of a dozen residential buildings in Tehran since 2017
- Reinforced Concrete Structures Project with ACI Standard
- Loading of Structures
- Structure Analysis
- Steel Structures Project AISC Steel Construction Manual (**LRFD**) Methods
- Finite Element Methods Using **MATLAB**
- Nonlinear Time History Analysis of Highway Bridges using OpenSees
- Design and Nonlinear analysis of tall buildings in the near-filed region
- Seismic Rehabilitation of Existing Building in Tehran
- Design and supervision of a dozen residential buildings in Tehran since 2017

OCCUPATIONS AS A SENIOR EXPERT /PROJECT MANAGER IN THE EARTHQUAKE–STRUCTURE DEPARTMENT:

2021-Present: Research Assistant in the Department of Structural Engineering Under the supervision of Professor Abdolreza Sarvghad Moghadam., International Institute of Earthquake Engineering and Seismology (IIEES). International Institute of Earthquake Engineering and Seismology

2017- Present: Freelance structural engineer
Professional engineering (P. Eng.) license issued by the Ministry of Roads and Urban Development, the Islamic Republic of Iran. (Construction engineering organization of Tehran). Date of issuance:**10 October 2017**. The license in design, supervision, and construction.

RESEARCH ACTIVITIES & WORK IN PROGRESS:

- Design & Time history and incremental dynamic analysis of R.C.- Highway bridges, especially Box-Girder & I-Girder bridges
- Effects of the vertical ground motion on the dynamic response of bridge structures
- Effect of Near-field earthquake parameters on damages & limit states of R.C.- highway bridges
- Hysteretic energy and its effects on the seismic performance of bridges
- Optimal intensity measure investigation for Highway bridges concerning near-field earthquake characteristics
- Developing a multi-variable vulnerability function for a class of highway bridges regarding the critical demand parameters
- Using Lasso Regression for identifying Optimal intensity measures

PUBLICATION: (Until March 2023)

For a detailed and Updated version, see my Google scholar profile

- ***Journal Articles*** **(First Author):**

***J1*-Malekzadeh, H**., Hosseini, M., Abbasi, H., Aziminejad, A., & Adib Ramazani, M. (2021). Developing a multi-variable vulnerability function for a class of multi-span continuous concrete box-girder highway bridges with emphasis on near-field earthquakes. *European Journal of Environmental and Civil Engineering*, 1-37. (Impact Factor**: 2.516 - Q2 2020**)
ISSN: 2116-7214

https://doi.org/10.1080/19648189.2021.1899991

- Journal metrics

***J2*- Malekzadeh, H**., Hosseini, M., Abbasi, H., Aziminejad, A., & Adib Ramazani, M. (2021). Optimal intensity measures for probabilistic seismic demand modeling of multi-span continuous concrete box girder bridges subjected to near-field earthquakes. (**In Persian**). *Quarterly Specialized Journal of Structural Engineering (IAU)*, 31-46.
https://dorl.net/dor/20.1001.1.23456310.1400.18.2.3.4

***J3*-Malekzadeh, H**., Eslmania, H., S. Moghadam. Multivariable probabilistic seismic demand model for Continuous Concrete Box-Girder Bridges Considering Hysteretic Energy and Residual Demands. **(Submitted - Under Review)**

- ***Journal Articles*** **(Corresponding Author):**

***J4*-**Eslmania, H., **Malekzadeh, H**., Jalali, S.A., S. Moghadam, A. (2021). Seismic Energy Demands and Optimal Intensity Measures for Continuous Concrete Box-Girder Bridges. https://doi.org/10.1016/j.soildyn.2022.107657

Conference proceedings and presentations ***(peer-reviewed):***

***C1*-**Sensitivity Analysis of Seismic Vulnerability of Common R.C. Highway Bridges to Near-Field Earthquakes Parameters (**presentation**)
Malekzadeh, H and Hosseini, M
ASCE lifeline Conference, Los Angeles 2021-2022, January 2022

ASCE AMERICAN SOCIETY® OF CIVIL ENGINEERS

By action of the Board of Direction

Hoodean Malekzadeh, Ph.D., P.Eng, R.Eng, M.ASCE

has been elected

Member

who is entitled to all the privileges granted by the Constitution of the Society, an organization for the advancement of professional knowledge and the improvement of civil engineering.

Dennis D. Truax, Ph.D., P.E., DEE, D.WRE, F.ASCE
ASCE President 2022

June, 2022

AMERICAN SOCIETY OF CIVIL ENGINEERS 1852

Thomas W. Smith III, ENV SP, CAE, F.ASCE
Executive Director