


MOHAMMAD ASKARI

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Updated July, 2023

EDUCATION

University of California, Los Angeles, United States of America Ph.D. in Structural and Earthquake Engineering Cumulative GPA: 4.0/4.0 via 76 Passed Credits	Sep 2021 - Present
Sharif University of Technology, Tehran, Iran M.Sc. in Earthquake Engineering Cumulative GPA: 4.0/4.0 (17.08/20) via 26 Passed Credits	Sep 2017 - Jan 2020
Sharif University of Technology, Tehran, Iran B.Sc. in Civil Engineering Cumulative GPA: 3.8/4.0 (17.56/20) via 140 Passed Credits	Sep 2013 - Aug 2017

HONORS AND AWARDS

Fully Funded Ph.D. Position Offer Civil and Environmental Engineering Department University of California, Los Angeles, United States of America	Mar 2020
Ranked 7th Among More Than 100 Peer B.Sc. Students Civil Engineering Department Sharif University of Technology, Tehran, Iran	Aug 2017
Direct Admission to M.Sc. Program with Full Scholarship Sharif University of Technology, Tehran, Iran	Jun 2017
Scholarship Foundation Award Due to High Academic Achievement Iran's National Elites Foundation (INEF)	Feb 2015
Iran National University Entrance Exam, Konkour Ministry of Education, Tehran, Iran Ranked 198 th (top 0.08%) among more than 250,000 participants in mathematics and physics field.	Jul 2013
Semifinalist in the 22nd and 23rd National Chemistry Olympiad Ministry of Education, Tehran, Iran	Feb 2011, Feb 2012

RESEARCH INTEREST

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| ▶ Deep Learning | ▶ Computer Vision |
| ▶ Machine Learning | ▶ Natural Language Processing |
| ▶ Artificial Intelligence | ▶ Software Development |
| ▶ Generative AI | ▶ Probabilistic Modelling |
| ▶ Geographic Information Systems (GIS) | ▶ Smart Cities |

RESEARCH EXPERIENCE

Technical Report and Poster Presentation <i>GPU-based Multiple Target Spectra Ground Motion Selection Tool.</i> The B. John Garrick Institute for the Risk Sciences, ACSE LifeLines 2021-22 Shokrabadi, Mehrdad; Bozorgnia, Yousef; Burton, Henry V.; Baker, Jack W.; Askari, Mohammad (2022): An Efficient Computational Platform for Selecting and Scaling Ground Motion Records while Considering Multiple Target Spectra.[DOI][GitHub]	Feb 2022
Technical Report <i>Probabilistic Seismic Hazard Analysis for Tehran City</i> Tehran Disaster Mitigation and Management Organization (TDMMO) Center for Infrastructure Sustainability and Resilience Research (INSURER), Sharif University of Technology, Tehran, Iran	Mar 2021

Master of Science Thesis Track

Jan 2020

Comprehensive Modeling of Epistemic Uncertainties in Seismic Hazard Analysis Based on Reliability Methods.

– Advisor: Professor Mojtaba Mahsuli

Sharif University of Technology, Tehran, Iran

This thesis aims to model the epistemic uncertainties in probabilistic seismic hazard analysis inclusively. The main novelties are: including the epistemic uncertainty in seismic sources' spatial geometry, occurrence rate, magnitude probability distribution parameters, rupture plane location and dimensions, hypocenter location on the rupture plane, choosing between different location models and ground motion prediction equations. The afore-mentioned uncertainties are represented as continuous random variables in multiple probabilistic models and the results, in consequence, indicate a significant increase in the PGA values of the hazard curve.

ACADEMIC EXPERIENCE

Research Assistant

Sep 2022 - Present

Data Analyzer, Machine Learning Engineer

Taciroglu Research Group (TRG), University of California, Los Angeles

Website: tacirogluresearch.org

I am one of the members of the building inventory group for the CHEER-CoPe project working on the following tasks:

- ▶ Convolutional Neural Network classification on satellite and street-view imagery.
- ▶ Generating empirical fragility curves by post hazard damage assessments using Deep Learning and Machine Learning methods.

Research Assistant

Sep 2021 - Aug 2021

Simulation Engineer

The B. John Garrick Institute for the Risk Sciences, University of California, Los Angeles

Website: risksciences.ucla.edu

My contributions include:

- ▶ Finalizing and setting up the GitHub for the GPU-based ground motion selection tool developed in Python;
- ▶ Running ANSYS Mechanical APDL models on Texas Advanced Computing Center (TACC) to simulate pipelines under multiple support excitations and fit regression models to the outputs.

Research Assistant

Aug 2018 - Aug 2021

Software Developer, Probabilistic Seismic Hazard Analyzer

Center for Infrastructure Sustainability and Resilience Research (INSURER), Sharif University of Technology, Tehran, Iran

Website: insurer.sharif.ir

I was one of the members of the software development team of Rtx, a computer program comprising various probabilistic models for reliability, risk, and resilience analysis. This software is implemented in an object-oriented architecture using C++ and Qt.

Rtx Developers: rtx.civil.sharif.edu/developers.html

My contributions include:

- ▶ Major overhaul of probabilistic seismic hazard analysis models, including implementing a library of new geographical seismic source models, ground motion prediction models, and the development of rupture area model;
- ▶ Creating the earthquake hazard analysis toolbox using MATLAB with a graphical user interface which works in parallel with Rtx.
- ▶ Revising Bayesian model inference of Rtx.

Teaching Assistant

Mar 2023 - Jun 2023

Introduction to Probability and Statistics for Engineers

University of California, Los Angeles

Instructor: Professor Enrique Lopez Droguett

Level: Undergraduate

Responsibilities: Holding discussion sessions, office hours, solving problem sets and exams.

Teaching Assistant*Fundamentals of Earthquake Engineering*

Instructor: Professor Yousef Bozorgnia

Level: Undergraduate

Responsibilities: Holding discussion sessions, office hours, solving problem sets and exams.

Mar 2022 - Jun 2022

University of California, Los Angeles

Teaching Assistant*Infrastructure Resilience*

Instructor: Professor Mojtaba Mahsuli

Level: Graduate

Responsibilities: Note preparation

Feb 2020 - Jun 2020

Sharif University of Technology

Teaching Assistant*Reliability, Risk, and Resilience*

Instructor: Professor Mojtaba Mahsuli

Level: Undergraduate

Responsibilities: Note preparation

Feb 2020 - Jun 2020

Sharif University of Technology

SELECTED COURSES**Sharif University of Technology**

- ▶ Structural Reliability and Probabilistic Modeling:
17.3/20 – Professor Mahsuli
- ▶ Infrastructure Resilience:
17.3/20 – Professor Mahsuli
- ▶ Fundamentals of Earthquake Engineering:
18.7/20 – Professor Mahsuli
- ▶ Fundamentals of Python Programming:
19.3/20 – Dr. Nikaein
- ▶ C++ Programming:
Audited – Professor Bazargan
- ▶ Numerical Calculations:
18.7/20 – Dr. Mohammadi
- ▶ Differential Equations:
19.0/20 – Dr. Kianpour

UCLA

- ▶ STATS M231A - Pattern Recognition and Machine Learning:
A+ — Professor Wu
- ▶ STATS 256 - Causality:
A — Professor Hazlett
- ▶ ECE C247 - Neural Networks and Deep Learning:
A — Professor Kao
- ▶ CEE 239 - Structural Dynamics:
A+ — Professor Narasimhan
- ▶ CEE 235 - Advanced Structural Analysis:
A+ — Professor Burton
- ▶ CEE 245 - Ground Motion Characterization:
A+ — Professor Bozorgnia

SELECTED ACADEMIC COURSE PROJECTS**Ph.D.**

- ▶ A Tutorial on Doubly Robust Targeted Maximum Likelihood Estimation Method. – Advisor: Professor Hazlett
- ▶ Implementing GPT-2 model for Shakespeare-like text generation using PyTorch. – Advisor: Professor Wu
- ▶ Exploring the Performance of CRNN, LSTM, Conditional GANs, and CNN on EEG Data using TensorFlow. – Advisor: Professor Kao
- ▶ Linear-Elastic Analysis of Three-Dimensional Structures for Any Geometry to Be Input into the MASTAN2 Pre-Processor Using MATLAB. – Advisor: Professor Burton

M.Sc.

- ▶ Evaluating a Community Resilience from Hazard Occurrence and Its Consequences to Recovery Process Using C++ and Rtx. – Advisor: Professor Mahsuli
- ▶ Investigation of Fragility Curves and Damage Modeling of Kermanshah Earthquake Using SeismoSignal, MATLAB, and Rtx. – Advisor: Professor Mahsuli
- ▶ Probabilistic and Deterministic Seismic Hazard Analysis of Kermanshah Province Using MATLAB and Mathcad. – Advisor: Professor Rahimzadeh
- ▶ Study on Earthquake Frequency Content and Response of Structural Members Using SeismoSignal, MATLAB, and SAP2000. – Advisor: Professor Dolatshahi
- ▶ Discrete Event Simulation of Concrete Batching Plant Using Visual Basic, AnyLogic, and MathWave EasyFit. – Advisor: Professor Alvanchi

B.Sc.

- Computing the Nonlinear Response of a Single-Degree-of-Freedom System Subject to Earthquake Excitation Using Newmark-Beta Numerical Method in MATLAB. – Advisor: Professor Mahsuli
- Python Programming Project of Processing Customers Demand Input via Text and Developing a Graphical User Interface Based on Object-Oriented-Programming and Tkinter Library. – Advisor: Dr. Hassan Nikaein

LICENSES AND CERTIFICATIONS

Machine Learning <i>Coursera</i> Instructor: Andrew Ng – Stanford University View Certificate	Feb 2021
Summer Invitational Terminal 2022 <i>Correlation One</i> AI Programming Competition – Strategic Game Play Design View Certificate	Aug 2022
Deep Learning Specialization <i>Coursera</i> Instructor: Andrew Ng – DeepLearning.AI View Certificate	May 2023

COMPUTER SKILLS

Programming	C/C++, Python, Visual Basic
Mathematical Applications	MATLAB, Mathematica
Structural	SAP2000, ETABS, SAFE
Graphics	AutoCAD, AutoCAD Civil 3D, Photoshop
Other Tools	Microsoft Office, Mathcad, L ^A T _E X

LANGUAGES

English – Professional Working Proficiency

Persian – Native

EXTRA CURRICULAR ACTIVITIES

- **Helping on Assembling RazFi Supercomputer with 210 Physical Cores** Sep 2019
Center for Infrastructure Sustainability and Resilience Research (INSURER)
- **Intra-University Basketball Tournament** Apr 2017, Dec 2019
Sharif University of Technology, Tehran, Iran
Ranked 3rd
- **Intra-Department Swimming Tournament** Nov 2019
Civil Engineering Department, Sharif University of Technology, Tehran, Iran
Ranked 2nd in Breaststroke 50m and 3rd in Freestyle 4x50m
- **Mountain Climbing** Sep 2019
Physical Education, Sharif University of Technology, Tehran, Iran
Summited mount Alam-Kuh with an elevation of 4850m
- **Solo Piano Performance** Dec 2018
Pedar Music Academy 8th Concert
Performed pieces composed by J. S. Bach, Franz Schubert, and Max Richter

REFERENCES

Professor Ertugrul Taciroglu

Professor

Website: samueli.ucla.edu/people/ertugrul-taciroglu/

Email Address: etacir@ucla.edu

Professor Mojtaba Mahsuli

Associate Professor

Website: sharif.edu/~mahsuli/

Email Address: mahsuli@sharif.edu