



Onur Deniz Akan

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Nationality: Turkish

EDUCATION AND TRAINING

[01/10/2019 – Current]

Doctor of Philosophy in Earthquake Engineering

IUSS Pavia and University of Pavia

City: Pavia | **Country:** Italy | | **Thesis:** 3D numerical investigation of nonlinear seismic soil-structure interaction in masonry towers with mixed implicit-explicit integration for improved solution stability

Solid FEM modelling in OpenSees and STKO

Implementing constitutive models (C++)

Implicit-explicit numerical integration

Cyclic constitutive modeling of soils

Computational soil-structure interaction

Seismic analysis of shallow-founded masonry structures

[05/02/2018 – 31/05/2019]

Master of Science in Earthquake Engineering and Engineering Seismology

IUSS Pavia

City: Pavia | **Country:** Italy | | **Thesis:** Displaced Shapes of Infilled RC Frames for Displacement-Based Design and Assessment

Erasmus Mundus Masters in Earthquake Engineering and Engineering Seismology (MEEES)

- Probability and Statistics for Engineering Applications
- Engineering Seismology and Seismic Hazard Assessment
- Geotechnical Earthquake Engineering
- Nonlinear Response Analysis
- Fundamentals of Seismic Design
- Seismic Risk Assessment

[01/09/2017 – 04/02/2018]

Master of Science in Earthquake Engineering and Engineering Seismology

Université Grenoble Alpes

City: Grenoble | **Country:** France |

Erasmus Mundus Masters in Earthquake Engineering and Engineering Seismology (MEEES)

- Engineering Seismology
- Quantitative Seismology
- Near Surface Geophysics
- Probabilistic Seismic Hazard Assessment
- Active Faults and Remote Sensing
- Signal Processing
- Basic Geomechanics

[02/09/2013 – 16/06/2017]

Bachelor of Science in Civil Engineering

WORK EXPERIENCE

[01/05/2019 – 27/09/2019]

University research associate

IUSS Pavia & University of Pavia

City: Pavia | **Country:** Italy

Advisors: Prof. Ricardo Monteiro & Prof. Gerard O'Reilly

Simplified analysis of reinforced concrete frames with infills (IUSS Pavia - 2 months)

Simplified analysis of structures (UniPV - 2 months)

[01/06/2016 – 01/08/2016]

Structural Engineering Intern

Franz Oberndorfer GmbH & Co. KG

City: Gunzkirchen | **Country:** Austria

Erasmus+ internship

Design and Production of Precast RC Elements

Design of RC Wall Structures in Seismic Zones (Eurocode 2, Eurocode 8)

[01/07/2015 – 01/08/2015]

Site Engineering Intern

Yapı Merkezi and SK Engineering Joint Venture

City: Istanbul | **Country:** Türkiye

Istanbul Strait Road Tube Crossing Project (Eurasia Tunnel)

Observing Cut&Cover, TBM and NATM tunnelling procedures.

OPENSEES IMPLEMENTATIONS

[2021]

ZeroLengthContactASDimplex Element

[3.1.9.4. ZeroLengthContactASDimplex Element — OpenSees Documentation documentation](#)

[2024 – Current]

PIMYimplex and PDMY02implex Materials

Not yet publicly available.

Implicit-explicit versions of PressureIndependMultiYield and PressureDependMultiYield02 Materials.

Based on the original implementations by Dr. Zhaohui Yang (UC San Diego)

PUBLICATIONS

[2022]

[Simplified modelling and pushover analysis of infilled frame structures accounting for strut flexibility](#)

Reference: Akan OD, O'Reilly GJ, Monteiro R. Earthquake Engng Struct Dyn. 2022; 51: 1383–1409.

Publication from Master's thesis

[2025]

Publications from PhD Thesis (In preparation)

TEACHING ASSISTANT-SHIP

[07/2022] **NHERI-SimCenter 2022 Programming Bootcamp**

Instructors: Dr. Peter Mackenzie-Helnwein & Dr. Frank McKenna

Short Course

(Online) Python, C and C++ languages, parallel programming with OpenMP and MPI, and Unix command line. Helping students during in-class exercises and answering questions during tutorials in a group of three TAs.

[28/10/2019 – 22/11/2019] **Reinforced Concrete Structures**

Instructor: Prof. Güney Özcebe (TED University)

ROSE Master curriculum, Pavia

(In presence) Preparing and grading homework, holding tutorial sessions.

[01/04/2019 – 03/05/2019] **Seismic Hazard and Engineering Seismology**

Instructor: Prof. Valerio Poggi (OGS)

ROSE Master curriculum, Pavia

(In presence) Assisting students with the course project together with other TAs from GEM foundation and grading exercises.

[09/2014 – 01/2017] **Lab Assistant and Tutor**

TED University, Ankara

Tutoring students in Intro. to Physics, Numerical Methods courses and Hydromechanics laboratory.

LANGUAGE SKILLS

Mother tongue(s): Turkish

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Italian

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

My Digital Skills

Python, C, C++, Matlab