**europass**

# Besim Yukselen

**Date of birth:** 1994 | **Nationality** | **Gender:** | **Phone number:**

**Email address:** | **LinkedIn:**

**Skype:** | **Address:** , Italy (Home),

**Address:** Palazzo del Broletto, Piazza della Vittoria, 15, 27100, Pavia, Italy (Work)

## ABOUT ME

I am a dedicated PhD student in Earthquake Engineering.

My academic journey began with a Bachelor of Science in Civil Engineering from Yildiz Technical University in Istanbul, Turkey. I furthered my studies with a Master of Science in Civil Engineering for Mitigation of Risk from Natural Hazards, Reduction of Seismic Risk curriculum jointly offered by the University of Pavia and the School of Advanced Studies IUSS Pavia.

During my Master's thesis, my research aimed to use statistical learning, a.k.a. machine learning algorithms, for predicting building responses, with the ultimate motivation of reducing the time required due to the time-consuming nonlinear response history analysis.

Transitioning to the industry after completing my master's degree, I gained valuable experience in seismic design, performance assessments, and retrofitting for various industrial and residential projects.

As a PhD student, my research focuses on the contemporary challenge of optimising integrated retrofitting strategies for the simultaneous needs for energy efficiency and seismic performance in residential buildings.

## EDUCATION AND TRAINING

02/10/2023 – CURRENT Pavia, Italy
**PHD. IN EARTHQUAKE ENGINEERING** University School for Advanced Studies IUSS Pavia & University of Pavia

**Website** https://www.iusspavia.it/it

24/09/2018 – 24/02/2021 Pavia, Italy
**MSC. IN CIVIL ENGINEERING FOR MITIGATION OF RISK FROM NATURAL HAZARDS REDUCTION OF SEISMIC RISK (ROSE) CURRICULA** University School for Advanced Studies IUSS Pavia & University of Pavia

**MSc. Graduation Thesis:**
Various machine-learning techniques have been tested to predict the response of an archetypal high-rise building under seismic excitation with the aim of time gain during the computationally expensive structural analysis step of seismic risk assessment workflow. Later obtained results have been used to obtain the fragility functions.

**Website** http://civrisk.unipv.it/ |

**Thesis** Use of Machine Learning Algorithms to Predict the Response of High-Rise Buildingfor Probabilistic Loss Assessment

04/09/2012 – 17/10/2017 Istanbul, Türkiye
**BSC. IN CIVIL ENGINEERING** Yildiz Technical University

**BSc. Graduation Thesis:**
Use of different shear wall modelling techniques and comparison of results according to Turkish Earthquake Code-2007 for 20-storey buildings with different arm length "U" type shear walls modelled using ETABS and Sta4CAD software.

**Investigation and Strengthening of Reinforced Concrete Buildings (Course):**
An existing 5-storey reinforced concrete building has been modelled using SAP2000. The seismic performance of the building has been evaluated per the Turkish Earthquake Code-2007.

**Reinforced Concrete Structure Design (Course):**

A 6-story reinforced concrete building was designed according to the Turkish Earthquake Code-2007.

**Website** http://www.yildiz.edu.tr/ |

**Thesis** Investigation of shear walls behaviour of reinforced concrete structures and modelling techniques of reinforced concrete shear walls

# WORK EXPERIENCE

14/02/2022 – 01/05/2023 Istanbul, Türkiye
**STRUCTURAL AND EARTHQUAKE ENGINEER** MIYAMOTO INTERNATIONAL TURKEY

**Seismic performance assessment of precast and cast-in-site reinforced concrete industrial buildings:**
Seismic performance evaluation and assessment of an industrial facility's frame and wall-frame dual system precast / cast-in-site reinforced concrete buildings have been done as per the Turkish Building Earthquake Code – 2018 (TBEC-2018) by conducting nonlinear dynamic and/or static procedures.

**Seismic performance assessment of steel industrial buildings:**
Seismic performance evaluation and assessment of moment frame and/or braced frame system steel buildings of an industrial facility have been done as per the ASCE/SEI 41-17 by conducting linear static procedures.

**Seismic performance assessment of industrial rack-clad buildings:**
Seismic performance evaluation and assessment of an industrial rack-clad building have been done per FEMA-460, ASCE/SEI 41-17 and AISI S100-16 by conducting linear static procedures.

**Ground motion record selection, scaling or matching:**
Ground motion record selection, scaling and/or matching have been done as per the TBEC-2018 for conducting nonlinear response history analysis for varying structural systems.

**Seismic performance assessment of non-structural building components:**
Seismic performance assessment of non-structural building components of production and auxiliary buildings of an industrial facility has been done as per FEMA-E74.
The task included creating a semi-automatic Excel spreadsheet, which may be used for future works that obligate filling non-structural inventory forms and simple checks of components fixity as per ASCE/SEI 41-17, FEMA-306 and ACI-318. The spreadsheet has been generated holistically to cover FEMA-E74 and is localised to the Turkish industry.

**Seismic retrofitting of the precast reinforced concrete building with friction dampers:**
Seismic retrofitting of an industrial facility's frame system precast reinforced concrete building has been done via friction dampers as per the ASCE/SEI 41-17 and FEMA-273.

01/03/2021 – 11/02/2022 Hatay, Türkiye
**STRUCTURAL DESIGN ENGINEER:** YUKSELEN MUHENDISLIK

**Seismic design and assessment of reinforced concrete residential buildings:**
Design and assessment calculations of residential reinforced concrete buildings have been done according to the Turkish Building Earthquake Code – 2018

**Design of secondary steel platforms:**
Design of steel platforms which are located on the roof of a data center to hold the HVAC system, have been done. The design of the platform has been done according to the Turkish Building Earthquake Code – 2018.

# LANGUAGE SKILLS

Mother tongue(s): **TURKISH**

Other language(s):

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken production | Spoken interaction | |
| **ENGLISH** | C1 | C1 | C1 | C1 | C1 |

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

# DIGITAL SKILLS

OpenSees | Seismosoft Products | Python | MATLAB | SAP2000 | ETABS | IdeaStatica | MS Office, Excel programming (VBA) | AutoCAD | LaTeX

## ADDITIONAL INFORMATION

### PROJECTS

01/11/2023 – CURRENT
**Prior-Built: Prioritisation of the Italian regions for seismic and energy performance upgrading of the existing buildings**
**University:** University School for Advanced Studies IUSS, Palazzo del Broletto, Piazza della Vittoria 15, 27100 Pavia PV & University of Porto, Portugal

**Principal Investigator:** Gianrocco Mucedero

**Funded by:** ReLUIS

**Activity:** Develop a solid integrated prioritisation framework for the Italian regions based on primary metrics needed for regional assessment. The prioritisation framework provides different prioritisation patterns and different refinement scales, from province-level to regional/national-level. The proposed framework can support the Italian government in foreseeing economic support and strategic financial planning for seismic strengthening and energy renovation interventions on existing buildings.

01/11/2023 – CURRENT
**SERENE - Optimal Seismic and Energy Retrofit of Buildings considering Economic and Environmental Impacts**
**University:** University School for Advanced Studies IUSS, Palazzo del Broletto, Piazza della Vittoria 15, 27100 Pavia PV & University of Porto, Portugal

**Principal Investigator:** Prof. Ricardo Monteiro

**Funded by:** Portuguese National Foundation for Science and Technology

**Activity:** Seismic performance assessment and retrofitting of existing RC buildings. Implementantion of MCDM approach for the selection of optimal integtrated retrofitting interventions.

20/10/2020 – 22/05/2021
**A python module to download unscaled record time histories** A module has been created as a web automation tool to download unscaled record time histories from the NGA-West2 Database by Record Sequence Numbers (RSNs) with given user credentials.

The code can be reached at
https://github.com/BsmYksln/NGA_W2_RSNs2TH

01/09/2016 – 30/09/2016
**Performance Evaluation of Existing Masonry Building** A masonry building with 5-storey each story 600 m2 was modelled using ETABS. Later, the seismic performance of the building was evaluated per the Turkish Earthquake Code 2007.