Davit Shahnazaryan

MSc

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Pavia, Italy

Education

Oct 2017 - Present

PhD Understanding and Managing Extremes

Scuola Superiore Studi Pavia, IUSS - Pavia, Italy

- **Thesis**: "Integrated Performance Based Seismic Design as a risk-targeted approach"
- Developing software tools for risk assessment (github)
- Development of a coding a framework for seismic design (github)
- Performance based seismic design
- Risk and Loss assessment of multi-story buildings

Sep 2016 - Feb 2018

MSc Earthquake Engineering And Engineering Seismology

Scuola Superiore Studi Pavia, IUSS - Pavia, Italy

- **Thesis:** "Comparison of Earthquake-Induced Losses of Reinforced Concrete and Steel Frame Buildings"
- Probabilistic Seismic Hazard Assessment
- Seismic Assessment of multi-story buildings
- Multi Hazard Risk Assessment of Single Building and Portfolio of buildings
- Seismic Isolation and Dissipation

Sep 2013- Oct 2015

MSc Civil Engineering - Laurea Magistrale

University of Bologna - Bologna, Italy

Graduated 110/110 cum laude.

- **Thesis**: "Metamaterials: Wave Propagation in Periodic Structures: Bragg- and Fano- like Band Gaps in Monodimensional Chains"

Sep 2008- May 2012

BSc Industrial and Civil Engineering

Yerevan State University of Construction and Architecture - Yerevan, Armenia

- **Thesis**: "Design of an Industrial Structure and Management of Construction Technologies"

Experience

Feb 2016- May 2017

Structural Designer

Smart Construction LLC - Yerevan, Armenia

May 2013- Sep 2013

Structural Designer

Armproject OJSC - Yerevan, Armenia

Jul 2012- Jun 2013

Structural Designer

Davtakert LLC - Yerevan, Armenia

IT Skills

Python
OpenSees
Matlab
OpenQuake
PACT
R
Tensorflow
NoSQL
SAP 2000
Robot Autodesk
Seismostruct
Microsoft Tools

Languages

English - TOEFL
Russian
Armenian
Italian

Expertise

Risk Assessment
Loss Assessment
Finite Element Analysis
Earthquake Engineering
Dynamic and Nonlinear Analysis
Machine Learning
Software Development

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Publications

- Shahnazaryan D., O'Reilly G.J., Monteiro R. (2021). Storey loss functions for seismic design and assessment: Development of tools and Application. https://doi.org/10.1177/87552930211023523
- Shahnazaryan D., and O'Reilly G.J. (2021). Integrating expected loss and collapse risk in performance-based seismic design of structures. Bulletin of Earthquake Engineering 19(2): 987–1025. https://doi.org/10.1007/s10518-020-01003-x
- Shahnazaryan D., and O'Reilly G.J. (2021). Performance-based seismic design: incorporating collapse safety and loss. Proceedings of 13th international conference on structural safety and reliability (ICOSSAR), Shanghai, P.R. China.
- Shahnazaryan D., O'Reilly G.J., Monteiro R. (2021). Development of a python-based storey loss function generator. Proceedings of the COMPDYN 2021 Conference, Athens, Greece.
- Shahnazaryan D., Castro J.M., Monteiro R. (2020). Comparison of earthquake-induced losses in reinforced concrete and steel frame buildings. Proceedings of 17th World Conference on Earthquake Engineering, Sendai, Japan.
- Shahnazaryan D., O'Reilly G.J., Monteiro R. (2019). Using direct economic losses and collapse risk for seismic design of RC buildings. Proceedings of the COMPDYN 2019 Conference, Hersonissos, Crete, Greece.

Software

- SLFGenerator - Tool that allows automated production of storey loss functions based on input fragility, consequence and quantity data. https://doi.org/10.5281/zenodo.4897799
- LOSS - Loss assessment framework for multi-storey buildings based on provided storey loss functions. DOI: 10.5281/zenodo.4954771
- IPBSD - Integrated Performance-Based Seismic Design. Performance based design framework based on limiting economic losses and targeting probability of collapse. https://github.com/davitshahnazaryan3/IPBSD
- RCMRF - Reinforced concrete building nonlinear model creator. DOI: 10.5281/zenodo.4954813