



Davit Shahnazaryan

Structural Engineer & Risk Engineering Software Developer

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Profile

Earthquake engineer and software developer with over a decade of experience across structural design, seismic loss and risk assessment, and full-stack development. Co-founder of Djura, building cloud tools for catastrophe risk engineering, and lead developer of data platforms used by European research infrastructures. Turns engineering methods into production software, from numerical models to deployed APIs.

Experience

Co-Founder & Developer

Jun 2024 – present

Djura | Risk - Data - Engineering, Pavia, Italy

- Designed, built and deployed the Djura platform on AWS (Django, Nuxt, Supabase): loss function generator, ground motion record selection, demand-intensity models and hazard consistency tools.
- Develop and maintain the **djura** Python package, bundling the platform's algorithms for engineering workflows.
- Deliver technical consulting and training on seismic risk and loss assessment for engineering clients.

Lead Software Developer (Affiliated Researcher)

Feb 2024 – present

EUCENTRE Foundation, Pavia, Italy

- Built and deployed the Built Environment Data platform and public API for experimental test data (Django, Nuxt, MongoDB, Docker, Nginx, Redis), running on Eucentre infrastructure.
- Developed web services for the MEET project with INGV and for EPOS, giving standardised access to structural test data.

Assistant Professor (RTDA)

Oct 2025 – present

IUSS Pavia, Italy (Post-doctoral Researcher, Oct 2021 – Sep 2025)

- SONATA (FIS Starting Grant): sensor-based monitoring and AI for seismic damage assessment of non-structural elements, towards a prototype risk-management system.
- ERIES (Horizon Europe, €11.6M, 13 partners): coordinated transnational access to experimental facilities, EU reporting and deliverables.
- ROSSINI (INAIL): designed the database behind a risk-aware navigation system for industrial plant workers.

Structural Designer

2012 – 2018

Smart Construction, Armproject, Davtakert (Yerevan, Armenia); ECO Panel Group (Glendale, CA, USA, remote)

- Seismic design, numerical analysis and construction drawings for commercial, residential and healthcare buildings, including a BMW showroom complex and the Vanadzor Medical Center.
- Prepared structural design and design manuals for an insulated concrete wall panel system.

Selected Software

- Open source:** djura, IPBSD design framework, storey loss function generator, RC frame modeller (OpenSees), xgb-rhomut (XGBoost demand models, 26M+ analysis results).
- OpenQuake Engine:** co-developed neural network ground motion and correlation models.

Skills

Engineering Development	OpenSees, OpenQuake, SAP2000, SeismoStruct, SeismoBuild, Robot, AutoCAD, QGIS, PACT Python, TypeScript/JavaScript, Django, Vue/Nuxt, Node.js, REST APIs, Swagger/OpenAPI, HTML/CSS
Data & ML Infrastructure	SQL/NoSQL (MongoDB, Supabase), TensorFlow/Keras, XGBoost, MATLAB, R Docker, Nginx, Redis, AWS, Git

Education

Ph.D. in Earthquake Engineering and Engineering Seismology, IUSS Pavia, Italy	2022
M.Sc. in Earthquake Engineering and Engineering Seismology (ROSE Programme), IUSS Pavia, Italy	2018
M.Sc. in Civil Engineering, University of Bologna, Italy	110 cum laude 2015
B.Sc. in Industrial and Civil Engineering, Yerevan State University of Architecture and Construction	2012

Languages & Recognition

Armenian (native), English (C2), Russian (C1–C2), Italian (A2–B1).

2024 Engineering Structures Best Paper of the Year, Artificial Intelligence in Structural Engineering.