



Strengthening OPEN CATASTROPHE Modelling

GEM Outstanding Contributor award: Peter Pazak - Aon Impact Forecasting

Peter Pazak is this year's recipient of the GEM Outstanding Contributor award. The award is given to individuals who have demonstrated exemplary contributions to GEM's work. Peter is given this award for his dedicated participation in the OpenQuake user forum and contributions to significant improvements of the OpenQuake software. Read Peter's story and learn how he began his passion for catastrophe modelling.

The beauty of mathematics: the start of my journey to catastrophe modelling

From my early years I was always interested in mathematics and problem solving. So in high school, my parents signed me up for a mathematics programme. I quickly realised some of my



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classmates were quite ahead of me. Luckily, this did not discourage or scare me, I was improving my skills quickly and dove deeper into the beauty of mathematics.

Love for computer programming, teaching and interest in Physics of the Earth

At that time, I fell in love with writing computer programs that illustrated complicated phenomena or calculated a result that would take a long time to solve on paper. Though I could imagine applying my knowledge on other topics, I decided to study physics at the university. Later my attention was caught by physics of the Earth and eventually I did my thesis about numerical modelling of seismic wave propagation. I also loved teaching and explaining the principles and phenomena to students, also via programming.

Using knowledge to solve more practical real-life problems

Despite my success in academia, what I realised after finishing my PhD was that the hundred pages on accuracy of numerical methods for simulating seismic wave propagation was useful to only a few people. It was one of the main reasons why I decided to move away from the university, despite it also meant stopping teaching. I wanted to apply my knowledge to solve more practical real-life problems.

Luckily, I could stay in the main field of my education and took a catastrophe modelling role in the insurance industry at Aon related to earthquake hazard and risk assessment. After 8 years of focusing on producing and explaining outputs of risk models, I

even got to create my first earthquake risk model and felt that is the way I want to move forward.

Impact of meeting the GEM community

I was very thankful to my Aon colleagues for giving me the opportunity to switch from Catastrophe Management to Earthquake model development at Aon's Impact Forecasting team. This switch allowed me to participate in one of the best training workshops I got when I started as an earthquake model developer: the GEM Hazard and Risk workshop in Pavia in 2018.

The power of the OpenQuake community

Besides learning a lot about the capabilities of OpenQuake, I also realised there is a big community using it and making it almost a common language for earthquake hazard and risk modellers. The big advantage of OpenQuake is that all the codes are open and well written. Functionality that is not available can be added quite easily on your own or with someone else's help: that is the power of the community.

OpenQuake and its impact to earthquake resilience in our society

I also realised the importance of the impact the GEM / OpenQuake community has on improving earthquake resilience within our society, especially by raising awareness about earthquake risk and the need to build safer buildings. So besides Impact Forecasting and GEM becoming strong partners for building catastrophe models for insurance companies for them to prepare for financial consequences of an earthquake, I clearly understood the importance of community activities to help save human lives.

Paying it forward

Immediately after the workshop I decided to follow all GEM updates and also started following the OQ forum, where all users can seek help and get support from the community. As I gathered more knowledge and studied OpenQuake myself, I felt I could help those in need to achieve their goals with what I have already learned, especially from the technical point of view.

The best way to learn is to teach and help others

I am really happy I could help many colleagues in the community to resolve their issues, despite not being my direct work responsibility, but being regarded as part of my OpenQuake training. The well-known truth is, you learn best when helping, explaining or teaching someone else.

Scientific collaboration and openness, keys to continued success of OpenQuake

With the collaborative approach, drive and support of the community, I am sure OpenQuake will remain the core and the best tool for doing scientific research in the field of earthquake hazard and risk modelling.

We can all influence what OpenQuake functionality will be included to help us get our work done more efficiently. Moreover, it's a platform that can greatly contribute to more connected, open, and transparent catastrophe modelling.

Strengthening open catastrophe modelling

OpenQuake is bringing different cat model vendors together and is creating a bridge to discuss and compare different assumptions, approaches, data and their impact on modelling results. Understand-

ing the impact of assumptions on modelled results is exactly what organisations, whether from governmental or financial sector, demand to do more to make informed decisions. Collaboration and requiring the models to be more transparent really drives the evolution of cat models forward.

For enabling all this, my big THANK YOU goes to the whole GEM team and especially to OpenQuake developers!

About the GEM Impact Stories

Earthquake risk remains abstract and highly technical, and there are significant risks due to poor or limited understanding of it. Because of this prevailing condition, policymakers and the public at large may not be able to fully take advantage of existing and future information that can either help create better or enhance existing earthquake risk reduction and management strategies, especially at the local and national level.

Specifically, the GEM Impact Stories project aims to:

- Collect and document stories where GEM or its partners have contributed to positive change
- Encourage policy and decision makers to use science- and evidence- based information to formulate earthquake DRR strategy at the national level through positive stories of change
- Increase awareness of the public at large on earthquake risk and preparedness

Acknowledgement

Our heartfelt thanks goes to Peter Pazak for contributing his story and valuable time with us. Peter is this year's recipient of the GEM Outstanding Contributor award. The award is given to individuals who have demonstrated exemplary contributions to GEM's work. Peter is given this award for his dedicated participation in the OpenQuake user forum and contributions to significant improvements of the OpenQuake software. Congratulations Peter!



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