# Ge Li

3450 Rue University, FDA 347, Montreal, Quebec, H3A 0E8
5148399916 | ge.li2@mail.mcgill.ca

## EDUCATION

**McGill University** — Montreal, Quebec
*Doctorate, Geophysics* — September 2014-Present

**University of Science and Technology of China** — Hefei, China
*B.Sc., Geophysics, School of the Gifted Young* — September 2010-June 2014

## EXPERIENCE

**McGill University** — Montreal, Quebec
*Research Assistant* — September 2014-Present

- Implemented the Finite-Element method to simulate the highly-heterogeneous process of earthquake rupture propagation.
- Analyzed complex geophysical data and identified previously-unrevealed structures using unsupervised machine learning methods (the K-means and the GMM method).
- Collaborated remotely with scientists in different countries (China, Canada, and the US) on various research projects.

**University of Science and Technology of China** — Hefei, China
*Undergraduate Research Assistant* — October 2012 – June 2014

- Managed and analyzed mining monitoring data for hazard assessment.
- Implemented the 3D finite-difference method to simulate earthquake wave propagation on the CUDA C platform.

## RESEARCH PROJECTS

**Earthquake rupture through a step-over fault system: A case study of the Leech River Fault, southern Vancouver Island**

- Performed 3D finite-element simulations.
- Presented a detailed investigation on the influence of a range parameters on rupture jumping scenario in the step-over fault system.
- Developed a new concept—Over Stressed Zone (OSZ) to interpret numerical observations.

**Identification of hidden seismic structures near the southern Vancouver Island**

- Relocated earthquake hypocenters using HypoDD.
- Identified earthquake clusters using the K-means and the Gaussian Mixture Model(GMM) method.
- Applied geophysical evidence to constrain clustering results.

**Induced earthquake source parameters investigation in Western Canadian Basin Sediment**

- Picked seismic phases in the time domain based on waveforms using various statistical method, including the Kurtosis method and the Akaike Information Criterion(AIC) method.
- Investigated earthquakes similarities based on the waveform cross-correlation information.
- Calculated earthquake source parameters based on the spectral and spectral ratio analysis.

## PUBLICATION AND PRESENTATIONS

- **Li, G.,** Y. Liu, Earthquake rupture through a step-over fault system: A case study of the Leech River Fault, southern Vancouver Island, *Submitted to JGR.*
- **Li, G.,** Y. Liu, C. Regalla, K. Morell, Seismicity relocation and fault structure near the Leech River Fault Zone, southern Vancouver Island (2018), J. Geophys. Res. Solid Earth, doi: 10.1002/2017JB015021.
- Zhang, H.L., D.W. Eaton, **G. Li**, Y. Liu and R. M. Harrington (2015), Discriminating induced seismicity from natural earthquakes using moment tensors and source spectra. J. Geophys. Res. Solid Earth, 121, doi:10.1002/2015JB012603.

- **Li, G.,** Y. Liu (2018), Dynamic rupture simulation along the southern San Andreas Fault through the San Gorgonio Pass – Effects of velocity model contrast, AGU Fall-meeting, Abstract ID: 384761, Washington, DC
- **Li, G.**, Y. Liu, C. Regalla, K. Morell, Seismicity relocation and fault structure near the Leech River Fault Zone, southern Vancouver Island, Canadian Geophysical Union, May 2017, Vancouver.
- **Li, G.,** Y. Liu, C. Regalla and K. Morell (2017), Fault Structure and Seismic behavior revealed by earthquake relocations near the Leech River Fault, southern Vancouver Island Oral Presentation, 2017 CGU/CSAFM Annual Joint Meeting Vancouver, BC.
- **Li, G.,** Y. Liu, C. Regalla and K. Morell (2016), Fine-scale fault structures revealed by earthquake relocations near the Leech River Fault, southern Vancouver Island AGU Fall-meeting, Abstract ID#: 160539., San Francisco, California.
- **Li, G.,** Y. Liu and C. Regalla (2016), Fine-scale fault structures revealed by earthquake relocations near the Leech River Fault, southern Vancouver Island. Gordon Research Conference, Rock Deformation; Aug 21-26, 2016; Andover, New Hampshire, USA.
- **Li, G.,** Y. Liu and C. Regalla (2015), Earthquake relocations near the Leech River Fault, southern Vancouver Island. AGU Fall-meeting, Abstract ID#: 81167, San Francisco, California.

## AWARDS AND DISTINCTIONS

- 2020 Bourse d'exemption UdeM ($9420 per year)
- 2018 Robert Wares. Fellowship ($8000)
- 2017 Leroy Memorial Fellowship ($4000)
- 2017 Best Student Paper in Seismology, Canadian Geophysical Union, May 2017, Vancouver
- 2017 Graduate Mobility Award ($2500)
- 2016 J.B. Lynch Fellowship ($15000)
- 2015 William Henry Howard Scholarship ($2975)
- 2011 3rd place, National College Student Handball Game of China, Xinxiang, China.