Lin Xiong

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EDUCATION

University of Houston, Department of Earth and Atmospheric Sciences (EAS) 09/2015--05/2020
Ph.D. Candidate in Geophysics GPA:3.9
Advisor: Guoquan Wang (Professor of Geophysics, Geodesy, and Geosensing Systems Engineering)
Thesis: Mapping, monitoring and modeling natural hazards with LiDAR and UAV technologies.

Institute of Tibetan Plateau Research, Chinese Academy of Sciences 09/2012--06/2015
Master of Science in Geophysics GPA:3.4

Peking University, School of Earth and Space Science 09/2008--06/2012
Bachelor of Science in Geology GPA:3.2

PROFESSIONAL EXPERIENCE

Geophysics Intern, Borehole Seismic, LLC 06/2019--09/2019

- Wrote python scripts to prepare for figures about micro-seismic inversion results. Helped to build velocity model and test inversion scripts.

ACADEMIC EXPERIENCE

Research Assistant, University of Houston 09/2015--Present

- Built accurate coastal terrain models based on point cloud data from LiDAR and UAV mapping at Freeport, TX. Designed a fourth-order Butterworth low-pass spatial filter for model generation to investigate the aliasing problem.
- Wrote shell scripts to extract features from terrain models, including shoreline, dune ridge and toe lines using least cost path (LCP) analysis. Forecasted coastal erosion in next 100 years using machine learning models (Gaussion Processes) based on these features.
- Modeled and analyzed point cloud of a 1-km tunnel beneath the Huangtupo landslide to detect possible deformation. Developed a modeling algorithm including registering point cloud with multi-station adjustment, extracting tunnel axis using RANSAC method, generating a 3D model by Elliptical Fitting Algorithm.

Teaching Assistant, University of Houston 01/2018--Present

- Taught GEO 6388 GIS labs (75 students) and GEOL 1130 Physical Geology labs (20 students).
- Guided and trained students (60) in Geophysics Field Camp each summer in Galveston, TX.

Research Assistant, Chinese Academy of Sciences 09/2012--06/2015

- Investigated stress evolution around the Yushu-Xianshuihe fault system in the past ~300 years using 3D finite element models. Developed a 3D viscoelastic (Maxwell model) finite element code through the finite element program generator (FEPG) and proposed a split node technique to deal with earthquakes reoccurring at the same location. (Master's thesis)

SELECTED PUBLICATIONS

- **Xiong L.**, et al. 2019. Coastal erosion forecasting along Gulf of Mexico coast near Freeport, TX based on Gaussian process models. *In preparation*.
- **Xiong L.**, et al. 2018. Detectability of repeated Airborne Laser Scanning for mountain landslide monitoring. *Geosciences*.
- **Xiong, L.**, et al. 2017. Anti-aliasing filters for deriving high-accuracy DEMs from TLS data: A case study from Freeport, Texas. *Computers & Geosciences*.
- **Xiong L.**, et al. 2014. Numerical modeling of static stress changes on main active faults of east Tibetan Plateau by the Wenchuan and the Lushan earthquakes. *Journal of Earth Sciences and Environment.*

SKILLS

- Skilled in Unix shell scripting, Matlab, Python, Fortran and R programming
- Fluent in Chinese (Native Speaker)

COURSEWORK

- Rock Physics, Potential Field Methods, Seismic Wave and Ray Theory, Geophysical Data Processing
- Geodynamics, Finite Element Analysis, Equations of Mathematical Physics
- C++, Data Structure, Geoscience Application of Matlab

HONORS AND AWARDS

- EAS Graduate Scholarship ($1000) 2017 and 2018
- EAS Travel Award ($1700) 2017 and 2018