Lijun Zhu

CONTACT INFORMATION

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RESEARCH INTERESTS

Signal detection and estimation, Numerical modeling, and Energy/Geophysics related problems: microseismic event location, passive seismic processing, seismic imaging, signal/image processing, compressed sensing, FDTD, sparse approximation, the inverse problem

PREVIOUS EXPERIENCE

Research Assistant Fall 2013 to present
Center for Energy and Geo Processing, Georgia Institute of Technology
- Supervisor: Prof. James McClellan and Ghassan AlRegib
- Focus: Numerical modeling, seismic imaging, detection and estimation

Research Intern Fall 2015
Houston Research Center, Aramco Service Company
- Supervisor: Dr. Deffenbaugh and Dr. Weichang Li
- Focus: Land seismic data acquisition, microseismic event detection

Research Intern Summer 2014
Research, Microsoft
- Supervisor: Dr. Dinei Florencio
- Focus: Numerical modeling for ultrasonic sound in parametric speak application

Research Co-op Spring and Fall, 2012
Research, Bose Corporation
- Supervisor: Guy Torio and Jahn Eichfeld
- Focus: Measurements in room and anechoic chamber, speaker/microphone array design and testing

EDUCATION

Georgia Institute of Technology, Atlanta, GA

Ph.D., Electrical Engineering, Expected graduation on May 2018
- Research topic: detection and estimation through signal processing and statistical tools
- Advisor: Professor James H. McClellan

Georgia Institute of Technology, Atlanta, GA

B.S., Electrical Engineering, May 2013

REFEREED JOURNAL PUBLICATIONS

[1] **L. Zhu**, E. Liu, and J. H. McClellan, *A multi-channel approach for automatic microseismic event localization using RANSAC-based arrival time event clustering(RATEC)*, **submitted to Geophysical Prospecting.**

[2] E. Liu, **L. Zhu**, A. Govinda Raj, J. H. McClellan, A. Al-Shuhail, S. I. Kaka, and N. Iqbal, *Microseismic events enhancement and detection in sensor array using autocorrelation based filtering,* **accepted by Geophysical Prospecting.**

REFEREED CONFERENCE PUBLICATIONS

[3] **Zhu, L.**, Z. Li, Z. Peng, E. Liu, and J. H. McClellan, *Weighted random sampling in seismic event detection/location (WRASED): Applications to local, regional, and global seismic networks*: Seismological Research Letters, 88, no. 2B.

[4] **L. Zhu**, E. Liu, and J. H. McClellan, in *Classification of arrival-time picks for microseismic event localization*: **79th EAGE Conference & Exhibition 2017**, Paris, France, 2017.

[5] **L. Zhu**, E. Liu, and J. H. McClellan, *An automatic arrival time picking method based on RANSAC curve fitting,* **78th EAGE Conference & Exhibition 2016**, Vienna, Austria, 2016.

[6] E. Liu, **L. Zhu**, J. H. McClellan, A. Al-Shuhail, and S. I. Kaka, *Microseismic events enhancement in sensor arrays using autocorrelation based filtering,* **78th EAGE Conference & Exhibition 2016**, Vienna, Austria, 2016.

[7] **L. Zhu**, E. Liu, and J. H. McClellan, *Full waveform microseismic inversion using differential evolution algorithm,* **2015 IEEE Global Conference on Signal and Information Processing (GlobalSIP)**, Orlando, FL, 2015.

PROFESSIONAL SERVICE

Referee Service

- *IEEE International Conference on Acoustic, Speech and Signal Processing, 2015-2017*

Other Services

- President and President of SEG student chapter at Georgia Tech, 2016–2017
- Vice President and President of SEG student chapter at Georgia Tech, 2014–2016
- Secretary of IEEE student chapter at Georgia Tech, 2011-2012

COMPUTER SKILLS

Programming language and software packages:

- C, C++, Python
- MATLAB
- Developer of Seismic Simulation, Survey, and Imaging (S3I) package CeGP

AWARDS

Society of Exploration Seismology

- Chevron Student Leadership Symposium (SLS) travel grant, 2016

REFERENCES

James H. McClellan (e-mail: jim.mcclellan@gatech.edu; phone: +1-404-894-8325)

- Professor; John and Marilu McCarty Chair of Electrical Engineering
  - ◇ School of Electrical and Computer Engineering, Georgia Institute of Technology
  - ◇ Atlanta, GA 30308, USA

Ghassan AlRegib (e-mail: alregib@gatech.edu; phone: +1-404-894-7005)

- Professor; PI and Director of CeGP
  - ◇ Center for Energy & Geo Processing, Georgia Institute of Technology
  - ◇ Atlanta, GA 30308, USA

Zhigang Peng (e-mail: zpeng@gatech.edu; phone: +1-404-894-0231)

- Professor of Geophysics
  - ◇ School of Earth and Atmospheric Sciences, Georgia Institute of Technology
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