Lijun Zhu

Research Assistant · Signal/Data Analysis

2626 Staunton Lane, Duluth, GA 30096

(+1)404-545-2619 | lijun.zhu@gatech.edu | www.lijunzhu.info | lijunzh | lijunzhugt

Summary

Ph.D. student majored in Electrical Engineering working on large-scale data processing and statistical model prediction challenges. Passionate about data science and machine learning algorithms. Co-author of FDTD simulation tool *S3I* and contributing to *Obspy*, the open-source seismic signal processing tools. Maintaining Linux HPC cluster and built computer server as a hobby.

Experience

Georgia Institute of Technology

Atlanta, GA

Research Assistant

Sep. 2014 - PRESENT

- Prepare and process large data using bash/awk script on Linux/Unix servers.
- Design, prototype, and test machine learning algorithms using *Python* on large-scale dataset with tools like PyTorch and Tensorflow.
- Maintain and upgrade linux HPC cluster and storage system.
- Develop and support in-house numerical (FDTD) simulation tools for elastic wave propagation in complex medium.

Houston Research Center, Aramco Service Company

Houston, TX

Research Intern

Aug. 2015 - Nov. 2015

- Wrote *Python/MATLAB* tools for organizing and processing large-scale dataset (> 1TB).
- Processed land acquisition data searching for small events in the noisy environment.
- Tested machine learning algorithms for dimension reduction, image segmentation and object tracking on spectrogram domain.

Microsoft Research

Redmond, WA

Research Intern

May. 2014 - Aug. 2014

- Wrote numerical simulation tools for ultrasonic wave propagation in *C++* with a *MATLAB* interface.
- Conducted acoustic measurements in anechoic chamber testing prototype products.
- Documented progress and results in published research papers.

Bose Coporation

Framingham, MA

Research Co-op

Jan. - May., Aug. - Dec. 2012

- Worked with marketing team in identifying customer's requirements and make product definition.
- Led the product prototyping in early stage and make demonstration to executives.
- Updated *MATLAB* and *Perl* script to automate testing procedure.
- Assisted adaptive microphone array design for conference setup.

Education

Georgia Institute of Technology

Atlanta, GA

PhD student in Electrical Engineering

Aug. 2014 - PRESENT

- Research topic: detection and estimation through signal processing, statistical, and machine learning tools.
- Advisor: Professor James H. McClellan.
- Expected graduated in 2018 (GPA = 3.91/4.00).

Georgia Institute of Technology

Atlanta, GA

B.S. in Electrical Engineering

Aug. 2009 - May. 2013

- Designed and tested keyword spotting algorithm for always-on voice recognition system.
- Built peripheral circuits and programmed algorithm on TI MSP430 chip.
- Graduated with Highest Honor (GPA = 3.96/4.00).

Service

SEG Student Chapter in Georgia Tech

Atlanta, GA

Vice President & President

Jun. 2016 - PRESENT

- Organized annual meeting and community services in 2016.
- Led the development of student chapter website redesign in 2017.

Publication

Referenced Journals

- Lijun Zhu, Entao Liu, and James H McClellan. A multi-channel approach for automatic microseismic event localization using ransac-based arrival time event clustering (ratec). *arXiv preprint arXiv:1702.01856*, 2017
- Entao Liu, Lijun Zhu, Anupama Govinda Raj, James H. McClellan, Abdullatif Al-Shuhail, SanLinn I. Kaka, and Naveed Iqbal. Microseismic events enhancement and detection in sensor arrays using autocorrelation-based filtering. *Geophysical Prospecting*, 65(6):1496–1509, 2017

Conference Abstracts

- Lijun Zhu, Entao Liu, James McClellan, Yang Zhao, Weichang Li, Zefeng Li, and Zhigang Peng. *Estimation of passive microseismic event location using random sampling-based curve fitting*, pages 2791–2796. 2017
- Lijun Zhu, Entao Liu, James H. McClellan, Zhigang Peng, and Zefeng Li. Classification of arrival-time picks for microseismic event localization. In *79th EAGE Conference and Exhibition 2017*, June 2017
- Lijun Zhu, Zefeng Li, Zhigang Peng, Entao Liu, and James H. McClellan. Weighted random sampling in seismic event detection/location (wrased): Applications to local, regional, and global seismic networks. *Seismological Research Letters*, 88(2B):463–723, 2017
- Zefeng Li, Lijun Zhu, Zhigang Peng, and James McClellan. *High-resolution microseismic detection and location using Large-N arrays*, pages 59–63. 2017
- Lijun Zhu, Entao Liu, and James H. McClellan. An automatic arrival time picking method based on RANSAC curve fitting. In *78th EAGE Conference and Exhibition 2016*. EAGE, May 2016
- Entao Liu, Lijun Zhu, and James H. McClellan. Microseismic events enhancement in sensor arrays using autocorrelation based filtering. In *78th EAGE Conference and Exhibition 2016*. EAGE, May 2016
- L. Zhu, E. Liu, and J. H. McClellan. Full waveform microseismic inversion using differential evolution algorithm. In *2015 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pages 591–595, Dec 2015
- L. Zhu and D. Florencio. 3D numerical modeling of parametric speaker using finite-difference time-domain. In *2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 5982–5986, April 2015