

### (a) Professional Preparation

Razi University, Kermanshah, Iran; Solid State Physics; B.Sc., 2007

University of Tehran, Tehran, Iran; Geophysics; M.Sc., 2009; Thesis title: *Depth estimation of magnetic anomalies using Euler deconvolution* (sponsored by National Iranian Oil Company, NIOC)

University of South Florida, Tampa, FL; Geophysics; School of Geosciences; Ph.D. Candidate, 2014–present; Thesis title: *Sparse Blind Deconvolution and Full-Waveform Inversion of Surface Ground Penetrating Radar data*

### (b) Interests

Geophysics, Exploration Seismology, GPR, Full-Waveform Inversion, Imaging, Inversion, Modelling, Data Analysis, Machine Learning, Signal Processing, Deconvolution, Imaging, Photogrammetry.

### (c) Appointments

2014–present: **Graduate Assistant, Instructor/TA/RA**, School of Geosciences, University of South Florida, Tampa, FL

2009–2014: **Geophysicist**, Kian Rayan Co., Tehran, Iran

2012–2014: **Physics Teacher** (part time), Daneshmand and Movahed Highschools, Tehran, Iran

2012 **Instructor** (part time), Azad University Tehran, Iran

2011–2012: **Instructor** (part time), Payam Noor University Tehran, Iran

2009–2012: **Instructor** (part time), Institute of Geophysics, University of Tehran Tehran, Iran

### (d) Internships

May - Aug 2008: **Geophysics Intern**, Geological Survey & Mineral Exploration of Iran, Iran

### (e) Publications

#### (e).1 Journal articles

1. **S. Jazayeri**, S. Kruse, M. Hassan, N. Yazdani, (–). Reinforced Concrete Mapping Using Full-Waveform Inversion of GPR Data. In: *Construction and Building Materials, Elsevier*. Submitted.
2. A. Saghafi, **S., Jazayeri**, S. Esmaili, C. P. Tsokos. (2019). Real-time object detection using Power Spectral Density of Ground Penetrating Radar Data. In: *Structural Control and Health Monitoring, Elsevier*. DOI: 10.1002/stc.2354
3. **S. Jazayeri**, N. Kazemi, S. Kruse. (2019). Sparse Blind Deconvolution of Ground Penetrating Radar data. In: *IEEE Transactions on Geoscience and Remote Sensing*. DOI: 10.1109/TGRS.2018.2886741
4. **S. Jazayeri**, A. Saghafi, S. Esmaili, C. P. Tsokos. (2018). Online Object Detection using Dynamic Time Warping on Common-Offset Ground Penetrating Radar. In: *Expert Systems With Applications, Elsevier*, Vol. 122, pp. 102-107. DOI: 10.1016/j.eswa.2018.12.057
5. **S. Jazayeri**, A. Klotzsche and S. Kruse. (2018). Improved resolution of pipes with full waveform inversion of common-offset GPR data using PEST. In: *Geophysics*, 83(4), H27-H41. DOI: 10.1190/geo2017-0617.1
6. M. Mohammad Zadeh, B. Oskooi, M. Mirzai and **S. Jazayeri**. (2013). Processing and interpretation of ground magnetic data corresponding to geothermal resources using Euler and AN-EUL methods, north-east of Mahallat. In: *Physics of earth and space Magazine*. No. 4, Issue 39, pp. 83-96.
7. S. Esmaili, M. K. Hafizi, H. Laleh, and **S. Jazayeri**. (2011). Inspection of changing processing parameters in GPR data interpretation. In: *Physics of earth and space Magazine*. No. 4, Issue 38, pp. 131-143.
8. **S. Jazayeri**, and B. Oskooi, (2010). Depth Estimation of Ground Magnetic Anomalies using Standard Euler Deconvolution in Reshm area, Semnan. In: *Physics of earth and space Magazine*. No. 2, Issue 37, pp. 33-43.

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### (e).2 Peer-reviewed Extended Abstracts

1. **S. Jazayeri**, S. Kruse, I. Hasan and N. Yazdani. (2018). Sparse Blind Deconvolution and Full-Waveform Inversion of Surface GPR Data, an Engineering Example. In: *SEG Technical Program Expanded Abstracts 2018*. pp. 5482-5486.
2. **S. Jazayeri**, A. Ebrahimi and S. Kruse. (2017). Sparse Blind Deconvolution of Common-offset GPR data. In: *SEG Technical Program Expanded Abstracts 2017*. pp. 5140–5145. doi:10.1190/segam2017-17791251.1
3. **S. Jazayeri**, and S. Kruse. (2016). Full-waveform inversion of ground penetrating radar (GPR) data using PEST (FWI-PEST method) applied to utility detection. In: *SEG Technical Program Expanded Abstracts 2016*. pp. 2474-2478. doi:10.1190/segam2016-13878165.1
4. M. Mohammad Zadeh, B. Oskooi, **S. Jazayeri** and M. Mirzai. (2012). Magnetic Studies in the areas with geothermal potentials. In: *49<sup>th</sup> symposium of geological society of Iran*.
5. M. Mohammad Zadeh, B. Oskooi, and **S. Jazayeri Jouneghani**. (2012). Magnetic studies for geothermal exploration in Mahalla. In: *International geophysical conference and oil & gas exhibition*. Istanbul, Turkey.
6. B. Yousefi, S. Esmaili, **S. Jazayeri**. (2010). Migration and instantaneous phase combination to detect hidden culverts in GPR data. In: *16th European Meeting of Environmental and Engineering Geophysics, Near Surface 2010*. Zurich, Switzerland. doi:10.13140/RG.2.1.3499.5287

### (e).3 Abstracts

1. E., Bell, N., Schmerr, J. Bleacher, K. E., Young, R. Porter, P. L., Whelley, W. B., Garry, S., Kruse, S., Esmaili, **S., Jazayeri**, J., Richardson, J., West, D., Pettit, S., Rees, (2019), Using Terrestrial Volcanic Feilds As An Analog For The Geophysical Characterization Of Potential Lunar Resources, Lunar In Situ Resource Utilization (ISRU) workshop 2019, Columbia, MD, 20–22 Feb.
2. **S., Jazayeri**, S., Kruse (2018), Automating Procedures in Initiating a Full Waveform Inversion Process of GPR data, Abstract (NS31B-0749) AGU Fall Meeting 2018, Washington, DC., 10–14 Dec.
3. S., Esmaili, S., Kruse, W. B., Garry, P., Whelley, K., Young, **S., Jazayeri**, E., Bell. (2018). Migration of ground penetrating radar (GPR) data to image the floor of lava tubes floor; TubeX project, Abstract (P51E-2925) AGU Fall Meeting 2018, Washington, DC., 10–14 Dec.
4. S., Esmaili, S., Kruse, W. B., Garry, P., Whelley, K., Young, **S., Jazayeri**, E., Bell. (2018). Assessing and optimizing GPR imaging of lava tubes: the TubeX project, Abstract (U11B-14 GPR) AGU Fall Meeting 2018, Washington, DC., 10–14 Dec.
5. K. E., Young, P. L., Whelley, S., Kruse, S., Esmaili, **S., Jazayeri**, E., Bell, W. B., Garry, J., Richardson, J. E., Bleacher, N., Schmerr (2018), Using GPR, LiDAR, magnetometry, and in-situ geochemistry to develop a strategy for the exploration and characterization of lava tubes, Abstract (P31H-3799) AGU Fall Meeting 2018, Washington, DC., 10–14 Dec.
6. P. L., Whelley, W. B., Garry, K. E., Young, , S., Kruse, S., Esmaili, **S., Jazayeri**, E., Bell, J. Richardson (2018), LiDAR surveys of lava tubes in Lava Beds National Monument, *GSA Annual Meeting in Indianapolis*, Indiana, USA.
7. K. E., Young, P. L., Whelley, S., Kruse, S., Esmaili, **S., Jazayeri**, E., Bell, W. B., Garry, J. E., Bleacher, N., Schmerr (2018), Using GPR, LiDAR, magnetometry, and in-situ geochemistry to develop a strategy for the exploration and characterization of lava tubes, *49<sup>th</sup> Lunar and Planetary Science Conference*, The Woodlands, TX, USA.
8. E., Bell, N., Schmerr, K. E., Young, P. L., Whelley, W. B., Garry, S., Kruse, S., Esmaili, **S., Jazayeri** (2018), Characterization of lava tubes with magnetometry, *49<sup>th</sup> Lunar and Planetary Science Conference*, The Woodlands, TX, USA.
9. **S., Jazayeri**, S., Kruse (2017), Development of FWI4GPR, an open-source package for full-waveform inversion of common-offset GPR data, Abstract (NS41B-0011) AGU Fall Meeting 2017, New Orleans, LA., 11–15 Dec.
10. P., Whelley, W. B., Garry, K., Young, S., Kruse, S., Esmaili, **S., Jazayeri**, E., Bell, R., Paylor. (2017). Visualizing lava flow interiors with LiDAR, Abstract (T44D-04) AGU Fall Meeting 2017, New Orleans, LA., 11–15 Dec.

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11. S., Esmaeili, S., Kruse, W. B., Garry, P., Whelley, K., Young, **S., Jazayeri**, E., Bell, R., Paylor. (2017). Resolution of lava tubes with ground penetrating radar: preliminary results from the TubeX project, Abstract (NS23A-0021) AGU Fall Meeting 2017, New Orleans, LA., 11–15 Dec.
  12. S., Kruse, C., Bank, S., Esmaeili, **S., Jazayeri**, S., Liu, N., Stoikopoulos. (2017). SIGKit: Software for Introductory Geophysics Toolkit, Abstract (NS41B-0015) AGU Fall Meeting 2017, New Orleans, LA., 11–15 Dec.
  13. E., Raines, T., Osborne, **S., Jazayeri**, S. Kruse. (2017). Carbon cycle driven critical zone evolution in a terrestrial carbonate system. In: *AGU-SEG Hydrogeophysics Workshop, Stanford, CA*.
  14. **S., Jazayeri**, S. Kruse, S. Esmaeili. (2015). Inversion of Attributes and Full Waveforms of Ground Penetrating Radar Data Using PEST, Abstract (NS41B-1941) presented at 2015 AGU Fall Meeting, San Francisco., 14–18 Dec. doi:10.13140/RG.2.1.4810.2480
  15. S., Esmaeili, **S., Jazayeri**, M. K., Hafizi. (2010). Detection and Depth estimation of Asphalt layers Using GPR method, 14<sup>th</sup> *Iranian Geophysical Conference (IGC)*, Tehran, Iran.
  16. S., Esmaeili, M. K., Hafizi, **S., Jazayeri**, M., Mohammadi Vizheh. (2010). 3D GPR data Process and Interpretation in archaeological studies in Kerman, Iran, 14<sup>th</sup> *Iranian Geophysical Conference*, Tehran, Iran.
  17. **S., Jazayeri**, S., Esmaeili. (2010). Comparison Between results of Depth Estimation of Ground Magnetic Anomalies, Using Standard Euler Deconvolution and Located Euler Deconvolution, 14<sup>th</sup> *Iranian Geophysical Conference*, Tehran, Iran.

#### (e).4 Technical Reports

S., Kruse, **S., Jazayeri**. (2016). Evaluating potential benefits of improved understanding of uncertainties associated with airborne electromagnetic (AEM) data in Eastern Nebraska. 101 pp.

#### (e).5 Patents

**S., Jazayeri**, S., Kruse. (2019). Precise Infrastructure Mapping Using Full-Waveform Inversion of Radar Signals. Filed Jun 27, 2018, United States Patent and Trademark Office, Non-Provisional patent number: 10,234,552 (Grant date March 19 2019).

A., Saghaei, **S., Jazayeri**, S., Esmaeili, C. Tsokos. (2019). Systems And Methods For Detecting Buried Objects. Filed Jun 28, 2018, United States Patent and Trademark Office, Non-Provisional patent number: 10,175,350 (Grant date Jan 8 2019).

#### (f) Synergistic Activities

##### 1. Conference service:

- (i) Co-organizer and co-chair for technical session: "Geophysics for Anthropogenic Targets", AGU fall meeting 2018, Washington, DC, December 10–14, 2018.
- (ii) Co-organizer and primary-chair for technical session: "Full-Waveform Inversion, Modeling, and Imaging in Seismology and Near-Surface Geophysics", AGU fall meeting 2018, Washington, DC, December 10–14, 2018.
- (iii) SEG 2018 Annual meeting technical committee member, Anaheim, CA, Oct 2018.
- (iv) Co-organizer and primary chair for special technical session: "Engineering Geophysics", SEG 2018 Annual meeting, Anaheim, CA, Oct 2018.
- (v) Co-organizer and primary chair for technical session: "Geophysics for Anthropogenic Targets", AGU fall meeting 2017, New Orleans, LA, December 11–15, 2017.

##### 2. Professional organization, journal and University services:

- (i) Member of SEG near surface technical session leadership board (since 2017).
- (ii) SEG Near surface technical session Social media lead (since 2017).
- (iii) President of the Iranian Student Association at USF (2017-2018).
- (iv) Editorial board member, Journal of Artificial Intelligence and Systems

##### 3. Journal and Conference reviewer: (i) Geophysics, (ii) Near Surface Geophysics, (iii) Journal of Geophysics and Engineering, (iv) Journal of Environmental & Engineering Geophysics, (v) The Leading Edge (vi) Remote Sensing

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(vii) Journal of Applied Geophysics (viii) International Journal of Speleology (ix) Arabian Journal of Geosciences (x) SEG annual meetings 2017 and 2018, (xi) AGU fall meetings 2017 and 2018, (xii) IEEE Southeastcon 2018.

- 4. Professional memberships:** (i) Society of Exploration Geophysicists (SEG) (ii) American Association of Petroleum Geologists (AAPG) (iii) American Geophysical Union (AGU) (iv) American Society of Civil Engineers (ASCE) (v) The Utility Engineering & Surveying Institute (UESI)

**(g) Awards and honors**

1. *Richard A. Davis (RAD) Endowed fellowship*, School of Geosciences, 2019.
2. *Dissertation completion Fellowship*, USF Office of Graduate Studies, 2018.
3. *Top presented paper*, SEG annual meeting 2017.
4. *American Society of Civil Engineers (ASCE) Trent R. Dames and William W. Moore Fellowship Recipient*, 2017-2018.
5. *Fred L. and Helen M. Tharp Endowed Scholarship Recipient*, 2015, 2016 and 2018.
6. *USF Student Government travel grant Award Recipient*, 2016, 2017 and 2018.
7. *Sigma Xi GIAR (Grants-in-Aid of Research) Award Recipient*, 2015.

**(h) Collaborators & Other Affiliations**

**Collaborators:** *University of South Florida:* Sarah Kruse; Glenn Thompson; Rocco Malservisi; Jochen Braunmiller; Judy McIlrath; Sanaz Esmaeili; Chris Tsokos. *Forschungszentrum Jülich:* Jan van der Kruk; Anja Klotzsche; *Louisiana State University:* Juan Lorenzo; *University of Calgary:* Nasser Kazemi. *University of Toronto:* Charly Bank; *Sultan Qaboos University:* Alaeddin Ebrahimi; *University of the Sciences in Philadelphia:* Abolfazl Saghafi; *NASA Goddard Space Flight Center:* William Brent Garry; Kelsey Young; Patrick Whelley; Jacob Richardson. *University of Maryland:* Ernie Bell.

**Graduate Advisors:** **PhD:** *University of South Florida:* Sarah Kruse; Stephen McNutt; Rocco Malservisi; Glenn Thompson; *Forschungszentrum Jülich:* Jan van der Kruk. **MSc:** *Institute of Geophysics, University of Tehran:* Behrooz Oskooi; Vahid Ebrahimzadeh Ardestani; Mohammad K. Hafizi.

**Thesis Adviser and graduate student Sponsor:** *Masters degree student co-adviser:* Mohammad Mohammad Zadeh (University of Tehran); Reza Shabrang (University of Tehran);