

# Xiaolong Wei

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## Education

- 2018–      **Ph.D in Geophysics**, University of Houston, Houston, USA
- 2015–2018   **M.S. in Geology**, Northwest University, Xi'an, China
- 2011–2015   **B.S. in Geophysics**, China University of Geosciences, Beijing, China

## Research Interests

- Geophysical inverse problems for multiple data sets (e.g., gravity, gravity gradiometry and magnetic)
- Structural similarity constraint joint inversion
- Uncertainty analysis in geophysical separate/joint inversions in both deterministic and stochastic frameworks
- Geology differentiation models
- Machine/deep learning algorithms applied to geophysical data interpretations

## Awards & Honors

- 2020      Outstanding Academic Achievement, University of Houston, Houston, USA
- 2018      The First Prize Scholarship, Northwest University, Xi'an, China
- 2017      The First Prize Scholarship, Northwest University, Xi'an, China
- 2016      The First Prize Scholarship, Northwest University, Xi'an, China
- 2015      Best Bachelor Thesis, China University of Geosciences, Beijing, China
- 2013      The Second Prize Scholarship, China University of Geosciences, Beijing, China

## Publications

### Peer-Reviewed

3. **Wei, X.** and Sun, J., 2020. Uncertainty analysis of 3D potential-field deterministic inversion using mixed Lp norms. *Geophysics*. under revision
2. Sun, J., **Wei, X.**, 2020. Recovering sparse models in 3D potential-field inversion without bound dependence or staircasing problems using a mixed Lp-norm regularization. *Geophysical Prospecting*. doi:[10.1111/1365-2478.13063](https://doi.org/10.1111/1365-2478.13063).
1. Sun, J., Melo, A., Kim, J.D. and **Wei, X.**, 2020. Unveiling the 3D undercover structure of a Precambrian intrusive complex by integrating airborne magnetic and gravity gradient data into 3D quasi-geology model building. *Interpretation*, 8(4), pp.1-50. doi:[10.1190/INT-2019-0273.1](https://doi.org/10.1190/INT-2019-0273.1).

### In preparation

1. **Wei, X.** and Sun, J., 2021. Uncertainty analysis of 3D geology differentiation models via joint inversion.

### Conference Proceedings

3. **Wei, X.** and Sun, J., 2020. Uncertainty analysis of joint inversion using mixed Lp-norm regularization. In *SEG Technical Program Expanded Abstracts 2020* (pp. 925-929). Society of Exploration Geophysicists. doi:[10.1190/segam2020-3428359.1](https://doi.org/10.1190/segam2020-3428359.1).
2. **Wei, X.** and Sun, J., 2020. Quantifying uncertainties of deterministic geophysical inversions using mixed Lp norms. In *SEG Technical Program Expanded Abstracts 2020* (pp. 1404-1408). Society of Exploration Geophysicists. doi:[10.1190/segam2020-3420227.1](https://doi.org/10.1190/segam2020-3420227.1).
1. Sun, J., Melo, A., Deok Kim, J. and **Wei, X.**, 2020. Characterizing a Precambrian intrusive complex by integrating potential field data into 3D quasi-geology model building. In *SEG Technical Program Expanded Abstracts 2020* (pp. 1374-1378). Society of Exploration Geophysicists. doi:[10.1190/segam2020-3428385.1](https://doi.org/10.1190/segam2020-3428385.1).

## Invited Talks

1. future

## Professional Affiliations & Activities

- 2020– Core contributor of joint inversion code in SimPEG (<https://simpeg.xyz/>)
- 2020– American Geophysical Union (AGU)
- 2020– European Association of Geoscientists & Engineers (EAGE)
- 2018– Society of Exploration Geophysicists (SEG)

## Reviewers

future–

## Certifications

2018      Certificate signed by Prof. Andrew Ng upon successfully completing the online machine learning course provided by Stanford University through Coursera Inc.