

# CURRICULUM VITAE

## Da Huo, Ph.D.

### CONTACT INFORMATION

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### EDUCATION

<b>Ph.D.</b> in Geography	Texas A&M University	Aug.2016 – Aug.2020
<b>M.S.</b> in Geoscience	Rice University	Aug.2013 – May.2015
<b>B.S.</b> in Geophysics	Tongji University	Sep.2008 – Jul. 2012

### RESEARCH EXPERIENCE

#### **Modeling Debris-Covered Glacier Dynamics in the Karakoram Himalaya**

Texas A&M University (College Station, Texas, U.S.) Aug. 2016-Aug.2020

- Developed models for understanding surface ablation and topographic evolution for debris-covered glaciers.
- Developed models for simulating supraglacial drainage and ponding.
- Studied ice-flow and sediment transport on debris-covered glaciers using modeling and satellite remote sensing.
- Climate-glacier sensitivity simulations based on integrated model.

#### **Radar for Bioenergy Crop Imaging**

Texas A&M GEOSAT Center (College Station, Texas, U.S.) Sep. 2016-Aug.2019

- Developed image processing and feature detection software for a newly designed radar system.
- Quantified carbon sequestration capabilities of genetically modified plants.
- Funded by the Department of Energy of United States.

#### **DecisionSpace Geosciences - Well Seismic Fusion**

Halliburton/Landmark Graphics Corp. (Houston, Texas, U.S.) May 2014-Nov. 2014

- Developed software workflows for DecisionSpace Geosciences and Well Seismic Fusion.
- Wrote technical manuals for geophysical data processing workflows used for oil&gas exploration.

#### **Process and structure of the lithosphere and upper mantle in the South China Sea using land and ocean seismic observations**

Tongji University (Shanghai, China) Aug. 2012-May.2013

- Developed workflow for processing data collected by ocean bottom seismometers.
- Performed statistical and spatial analysis of Earth ambient noise.

### TEACHING EXPERIENCE

Lab instructor for GIS and remote sensing courses at Texas A&M University:

- GEOG 475: Advanced GIS (lab sections) Jan.2020-May.2020
- GEOG 477/677: Terrain Analysis Mapping (lab sections) Aug.2019-Dec.2019
- GEOG 391: Geodatabases (lab sections) Aug.2019-Dec.2019

### AWARDS

Baker Hughes Scholarship	Rice University	2013
Scholarship for Outstanding Social Works	Tongji University	2012
SITP Student Innovation Award	Tongji University	2011

### CERTIFICATES

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Machine learning (Stanford University online, 2015)

Deep learning for computer vision (Nvidia, 2020)

## PUBLICATIONS

1. **Huo, D.**, Chi, Z. & Ma, A. (2021). Modeling Surface Processes on Debris-Covered Glaciers: A Review with Reference to the High Mountain Asia. *Water*. 13.101
2. **Huo, D.**, Bishop, M. P. (2021). Modeling Supraglacial Ponding and Drainage on Debris-Covered Glaciers. *Earth Surface Dynamics*. (**under review**)
3. **Huo, D.**, Bishop, M. P., Young, B. W. & Chi, Z. (2020). Modeling the Feedbacks Between Surface Ablation, Topography and Debris Transport on Debris-Covered Baltoro Glacier in the Central Karakoram. *Geomorphology* (**under review**)
4. **Huo, D.**, Bishop, M. P. & Bush, A. (2020). Understanding Complex Debris-Covered Glaciers: Concepts, Issues and Research Directions. *Frontiers in Earth Science*. (**under review**)
5. **Huo, D.**, Bishop, M. P., Haritashya, U. K., Young, B. W., & Chi, Z. (2020). Numerical Modeling Issues for Understanding Complex Debris-Covered Glaciers. *Treatise on Geomorphology*, 2nd edition. Elsevier
6. Bush, A., Bishop, M. P., **Huo, D.**, Chi, Z., & Tiwari, U. (2020). Issues in Climate Analysis and Modeling for Understanding Mountain Erosion Dynamics. In *Treatise on Geomorphology*, 2nd edition. Elsevier
7. Bishop, M. P., Young, B. W., Chi, Z., & **Huo, D.** (2020). Spatial Analysis and Modeling in Geomorphology. In *Treatise on Geomorphology*, 2nd edition. Elsevier
8. Ma, A., Filippi, A., Wang, Z., Yin, Z., **Huo, D.**, Li, X., Guneralp, B. (2020). Fast Sequential Feature Extraction for Recurrent Neural Network-based Hyperspectral Image Classification. *IEEE Transactions on Geoscience and Remote Sensing*.
9. Li, X., **Huo, D.**, Goldberg, D. W., Chu, T., Yin, Z., & Hammond, T. (2019). Embracing Crowdsensing: An Enhanced Mobile Sensing Solution for Road Anomaly Detection. *ISPRS International Journal of Geo-Information*, 8(9), 412.
10. Bishop, M. P., Bagavathiannan, M. V., Cope, D. A., **Huo, D.**, Murray, S. C., Olsenholler, J. A., Rooney, W. L., Thomasson, J. A., Valasek, J., Young, B. W., Filippi, A. M., Hays, D. B., Malambo, L., Popescu, S., Rajan, N., Singh, V., McCutchen, B., Avant, B., and Vidrine, M. (2018). "High-resolution UAS imagery in agricultural research: Concepts, issues, and research directions", in *High Resolution Remote Sensing: Data, Analysis, and Applications*, pp. 3-32. CRC Press.
11. Bishop, M. P., Young, B. W., & **Huo, D.** (2018). "Geomorphometry: Quantitative Land-Surface Analysis and Modeling" in *Reference Module in Earth Systems and Environmental Sciences*. Elsevier.
12. **Huo, D.**, Bishop, M. P., & Young, B. W., (2018) Geomorphometric Assessment of Glacier State in the Karakoram, Himalaya. *Proceedings of the 2018 Geomorphometry Conference*.
13. Xiao, H., Xue, M., Yang, T., Liu, C., Hua, Q., Xia, S., Huang, H., Le, B.M., Yu, Y., **Huo, D.**, & Pan, M. (2018). The Characteristics of Microseisms in South China Sea: Results From a Combined Data Set of OBSs, Broadband Land Seismic Stations, and a Global Wave Height Model. *Journal of Geophysical Research: Solid Earth*, 123(5), 3923-3942.
14. Liu, C., Hua, Q., Pei, Y., Yang, T., Xia, X., Xue, M., Le, B., **Huo, D.**, Liu, F., & Huang, H. (2014) Passive-source Ocean Bottom Seismograph (OBS) array experiment in South China Sea and data quality analyses. *Chinese Science Bulletin* : 59(33).
15. **Huo, D.**, & Yang, T. (2013) "Seismic ambient noise around the South China Sea: seasonal and spatial variations, and implications for its climate and surface circulation." *Marine Geophysical Research* 34(3-4), 449-459.

## CONFERENCE PRESENTATIONS AND POSTERS

1. **Huo, D.**, Bishop, M. P., Young, B. W., & Chi, Z. Understanding Climate-Glacier Dynamics in the Karakoram Himalaya using Debris-Flux and Ablation Modeling. (2019). *American Geophysical Union Fall Meeting*, 9-13, December, 2019, San Francisco, California.

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2. Young, B., Bishop, M. P., **Huo, D.**, & Chi, Z. (2019). Geomorphometric Characterization of Topographic Structure for Evaluation of Glaciers in the Central Karakoram Himalaya. *American Geophysical Union Fall Meeting*, 9-13, December, 2019, San Francisco, California.
  3. Singh, V., Martin, D., Chi, Z., **Huo, D.**, Latheef, M., Sapkota, B., ... & Bagavathiannan, M. (2019). Effectiveness of Weed Classification and Spray Application Using an Unmanned Aerial System. *ASA, CSSA and SSSA International Annual Meetings*.
  4. **Huo, D.**, Bishop, M. P., Delgado, A., Dobрева, D., Hays, D., Wang, X., and Teare, B. (2018). Evaluation of a 2 GHz Prototype Ground Penetrating Radar System for Estimating Cassava Root Biomass. *American Geophysical Union Fall Meeting*, 10-14, December, 2018, Washington, D.C.
  5. Bishop, M. P., Hays, D., Wolfe, M., **Huo, D.**, Delgado, A., Dobрева, D., and Wang, X. (2018). Assessment of Sorghum Perennial Grass Root Biomass Using a Prototype 1.9 GHz Ground Penetrating Radar. *American Geophysical Union Fall Meeting*, 10-14, December, 2018, Washington, D.C.
  6. Young, B., Bishop, M. P., and **Huo, D.** (2018). Utilizing topographic structure for characterizing and understanding process-form relationships of mountain geodynamics in the central Karakoram Himalaya. *American Geophysical Union Fall Meeting*, 10-14, December, 2018, Washington, D.C.
  7. **Huo, D.**, Bishop, M. P., and Young, B. (2018) Modeling Glacier Surface Ablation Dynamics for Investigating Debris-Covered Glacier Sensitivity to Climate Change in the Karakoram Himalaya. *Geological Society of America Annual Meeting*, 4-7 November, 2018, Indianapolis, Indiana.
  8. Bishop, M. P., Young, B. W., & **Huo, D.** (2018). Characterization and Utilization of Topographic Anisotropy and Geomorphometric Signatures for Investigating Mountain Geodynamics in the Karakoram Himalaya. *Geological Society of America Annual Meeting*, 4-7 November, 2018, Indianapolis, Indiana.
  9. Young, B. W., Bishop, M. P., & **Huo, D.** (2018). Geomorphometric Analysis for Characterization and Mapping of Crustal Deformation in The Karakoram Himalaya. *Geological Society of America Annual Meeting*, 4-7 November, 2018, Indianapolis, Indiana.
  10. Teare, B. L., Delgado, A., Hays, D. B., Dobрева, I., & **Huo, D.** (2018). Ground Penetrating Radar for Root Crop Phenotyping. *ASA, CSSA, and CSA International Annual Meeting*.
  11. Wolfe, M.; Dobрева, I. D.; Delgado, A.; Hays, D. B.; Bishop, M. P.; **Huo, D.**; Wang, X.; Teare, B. L.; Burris, S. (2017) Ground Penetrating Radar For Estimating Root Biomass Through Empirical Analysis. *American Geophysical Union Fall Meeting* 11-15 December, 2017, New Orleans, Louisiana.
  12. **Huo, D.**, Bishop, M. P., and Young, B. (2017) Wavelet Analysis of Glacier Topographic Properties for Characterizing Glacier Dynamics in the Karakoram, Himalaya. *Geological Society of America Annual Meeting*, 22-25 October, 2017, Seattle, Washington.
  13. Young, B., Bishop, M. P., **Huo, D.**, and Owen., L. A. (2017) Geomorphometric Characterization of Topographic Structure and Tectonics in the Karakoram Himalaya, Pakistan. *Geological Society of America Annual Meeting*, 22-25 October, 2017, Seattle, Washington.
  14. Bishop, M. P., Bush A., Dobрева, I., Young, B., and **Huo, D.**, (2017). Climate-Topographic Forcing and Mountain Geodynamics in the Central Karakoram Himalaya. *Geological Society of America Annual Meeting*, 22-25 October, 2017, Seattle, Washington.
  15. **Huo, D.**, Bishop, M. P., and Young, B. (2017) Geomorphometric characterization of debris covered glaciers in the Karakoram, Himalaya. *Himalaya. American Association of Geographers Annual Meeting*, 5-9 April, 2017, Boston, Massachusetts.
  16. Young, B., Bishop, M. P., and **Huo, D.** (2017) Geomorphometric characterization of topographic and lithological variations in the Karakoram, Himalaya. *American Association of Geographers Annual Meeting*, 5-9 April, 2017, Boston, Massachusetts.

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**PROFESSIONAL MEMBERSHIPS**

American Geophysical Union (AGU)

American Association of Geographers (AAG)

Geological Society of America (GSA)