AKSHIKA ROHATGI

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Curriculum Vitae as of October 2025

EDUCATION

The University of Texas at Austin 2023 – 2027 (expected)
Ph.D. in Computational Geophysics GPA 3.9/4.0
Advisors: Dr. Andrey Bakulin and Dr. Sergey Fomel

Indian Institute of Technology (IIT), Kharagpur 2019 – 2021
MS in Geophysics GPA 8.97/10.0, Institute Silver Medalist
Advisor: Dr. Sankar Kumar Nath

University of Delhi 2016 – 2019
BS (Hons) Physics GPA 8.39/10.0

RESEARCH EXPERIENCE

Texas Consortium for Computational Seismology (TCCS), UT Austin Aug 2023 – present
PIs: Dr. Sergey Fomel, Dr. Andrey Bakulin *Graduate Research Assistant*

- Developing algorithms to quantify and correct seismic phase perturbations for high resolution imaging.
- Developing and deploying a new Julia Package on local seismic attributes "LocalSignalAttribute"

University of Texas Institute of Geophysics (UTIG), UT Austin Apr 2021 – Sep 2021
PI: Dr. Mrinal K. Sen *Research Intern*

- Estimated seismic wavelets using statistical methods, constructed low-frequency models, and performed model-based post-stack inversion to generate seismic inversion images
- Segmented the obtained seismic inversion images using the K-means clustering algorithm.

Department of Geology and Geophysics, IIT Kharagpur Apr 2020 – May 2021
PI: Dr. Sankar Kumar Nath *Masters Thesis*

- Site Characterization and Seismic Hazard Analysis for 2001 Bhuj Earthquake in Kutch Region Gujrat, India.
- Achieved liquefaction susceptibility for the Bhuj 2001 earthquake.

CSIR – National Physical Laboratory, New Delhi Summer 2017, Summer 2019
PI: Dr. R.K. Kotnala *Research Intern*

- Developed biosensors using an impedance analyzer.

INDUSTRY EXPERIENCE

TGS Research and Development May 2025 – Aug 2025
Research Intern Houston, Texas

- Developed the "Phase QC Tool" module in Imaging AnyWare software to analyze seismic phase.
- Applied phase despeckling on land data to enhance seismic resolution.

SLB Geophysics Technology (Formerly Schlumberger) Oct 2021 – Jun 2023
Commercialization Geophysicist Mumbai, India

- Worked on DELFI Seismic Processing platform for 3D seismic visualization.
- Deployed automated end-to-end tests using Protractor for CI/CD pipelines on Microsoft Azure.

Oil and Natural Gas Corporation May 2020 – Jun 2020
Intern Dehradun, India

- Worked on non-seismic methods of prospecting like gravity, electromagnetic, and magnetic methods.

TEACHING EXPERIENCE

Physical Geology (GEO 401) | Teaching Assistant | UT Austin Spring 2024
Led field sessions and taught introductory geology to a cohort of 80+ students.

TECHNICAL SKILLS

Software: Madagascar, Imaging AnyWare, Hampson Russell, Petrel, OMEGA, Delfi Zenith, MATLAB
Languages: Julia, Python, C, C++, MATLAB, SEGTeX, Typescript

PEER-REVIEWED PUBLICATIONS

2. A. Rohatgi, A. Bakulin, and S. Fomel, 2025, Theory of seismic phase analysis using circular statistics. [*Under Preperation*]

1. A. Rohatgi, A. Bakulin, and S. Fomel, 2025, Data-driven analysis of seismic phase using circular statistics. *The Leading Edge (DOI: 10.1190/tle44090154.1)*.

CONFERENCE PROCEEDINGS

8. Rohatgi, A., Bakulin, A., and Fomel, S., Theory of seismic phase analysis using circular statistics. *International Meeting for Applied Geoscience & Energy, 2025, Expanded Abstract* [Talk]

7. Rohatgi, A., Bakulin, A., Fomel, S., and Badger. J., Impact of near-surface topography on reflection distortions: From diffractions to speckle noise. *International Meeting for Applied Geoscience & Energy, 2025, Expanded Abstract* [Poster]

6. Rohatgi, A., Bakulin, A., and Fomel, S., Seismic phase spectral analysis: Field-data insights from circular statistics. *International Meeting for Applied Geoscience & Energy, 2025, Expanded Abstract* [Poster]

5. Bakulin, A., Rohatgi, A., and Fomel, S., Statistical Analysis of Seismic Phase Variability in Dense Data. *86th EAGE Annual Conference & Exhibition, 2025, Expanded Abstract (DOI: 10.3997/2214-4609.2025101166)* [Talk]

4. Rohatgi, A., Bakulin, A., and Fomel, S., Analyzing the impact of additive and multiplicative noise in seismic data. *International Meeting for Applied Geoscience & Energy, 2024, Expanded Abstract (DOI: 10.1190/image2024-4086176.1)* [Talk]

3. Rohatgi, A., Bakulin, A., and Fomel, S. Phase Pilot Recovery for Mitigating Speckle Scattering Noise. *International Meeting for Applied Geoscience & Energy, 2024, Expanded Abstract (DOI: 10.1190/image2024-4091774.1)* [Poster]

2. Rohatgi, A., Bakulin, A., and Fomel, S. Seismic Speckle Noise: Recognizing Scattering Noise from Near-Surface Heterogeneities. *AGU Fall Meeting 2024 (DOI: 10.22541/essoar.173557561.19391758/v1)* [E-lightning Talk]

1. Bakulin, A., Shuster, M., Bhattacharya, S., Delshad, M., Alhotan, M., Li, C., and Rohatgi, A.. Field-Test Design for Geophysical Monitoring of Hydrogen Injection. *AGU Fall Meeting 2024 (DOI: 10.22541/essoar.173627314.46466893/v1)* [Invited Poster]

AWARDS & ACHIEVEMENTS

- First place in JSG Geo-Hackathon on Computational Reproducibility. [Github repo] 2024
- Great Start Scholarship, Jackson School of Geosciences. Fall, 2023
- Employee of the Month, Schlumberger GTC. Feb 2022
- Institute Silver Medal, IIT Kharagpur. 2021
- 99th percentile (All India Rank 384) in IIT-JAM Physics. 2019

SERVICE & VOLUNTEERING

- Session Co-Convener: Characterization of Natural Hydrogen Reservoir, IMAGE Conference 2025
- Manuscript Reviewer, The Leading Edge Journal 2025-present
- Abstract Reviewer, Society of Exploration Geophysicists (IMAGE Conference) 2025–present
- Newsletter Editor & Reviewer, SLB Geophysics Community 2022
- Executive Member, Prithvi Earth Science Fest, IIT Kharagpur 2019–2020