


# Stanford

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## Rahul Sarkar

Ph.D. Student in Computational and Mathematical Engineering, admitted Autumn 2017

 Resume available Online

### Bio

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#### BIO

I am a Ph.D. student in the Institute for Computational and Mathematical Engineering (ICME) at Stanford University. I am advised by Biondo Biondi & András Vasy. I expect to graduate in 2022. I obtained a Masters from ICME in Computational Mathematics in 2017. Before coming to Stanford, I had the privilege to work for Schlumberger in USA and Mexico. I finished my undergraduate study in IIT Kharagpur, India.

#### HONORS AND AWARDS

- Shell Fellowship, Stanford University (2015-2016)
- DAAD WISE Scholarship, DAAD (Deutscher Akademischer Austauschdienst) (2010)
- Institute Silver Medal, Indian Institute of Technology, Kharagpur (2011)

#### EDUCATION AND CERTIFICATIONS

- Ph.D., Stanford University , Computational and Mathematical Engineering
- MS, Stanford University , Computational and Mathematical Engineering (2017)
- Integrated BS and MS, Indian Institute of Technology, Kharagpur , Geophysics (Major), Physics (Minor) (2011)

#### STANFORD ADVISORS

- Andras Vasy, Doctoral Dissertation Co-Advisor (AC)
- Biondo Biondi, Doctoral Dissertation Advisor (AC)

#### PATENTS

- Rahul Sarkar, Marco Pistoia. "United States Efficient quadratic Ising Hamiltonian generation with qubit reduction", IBM Corporation., Nov 1, 2019

#### PERSONAL INTERESTS

Traveling, Physics, Finance.

#### LINKS

- Personal website: <http://web.stanford.edu/~rsarkar/>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Inverse problems, machine learning for seismic imaging, quantum computing

## PROJECTS

- Finding a cover for an ellipse with N rectangles - Stanford University (1/1/2016 - 3/31/2016)
- Dynamic Asset Allocation using Reinforcement Learning - Stanford University (9/20/2016 - 12/16/2016)
- Automated Aircraft Touchdown - Stanford University (10/1/2016 - 12/31/2016)
- Information Directed Reinforcement Learning - Stanford University (1/1/2017 - 3/30/2017)

## LAB AFFILIATIONS

- Biondo Biondi, Stanford Exploration Project (9/15/2015)

## Teaching

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### COURSES

#### 2019-20

- Introduction to Quantum Computing and Quantum Algorithms: CME 250Q (Aut)

## Professional

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### WORK EXPERIENCE

- Quantum Computing Graduate Intern - IBM Thomas J. Watson Research Center (6/17/2019 - 9/13/2019)
- Quantum Algorithms Researcher - QC Ware Corp. (7/1/2018 - 9/23/2018)
- Application Developer - QC Ware (7/1/2017 - 9/25/2017)
- Geophysicist - Schlumberger (10/1/2013 - 8/31/2015)
- Incubator Program - Schlumberger (7/24/2011 - 9/30/2013)

## Publications

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### PUBLICATIONS

- **Texture Based Classification Of Seismic Image Patches Using Topological Data Analysis** *81st EAGE Conference and Exhibition 2019*  
Sarkar, R., Nelson, B. J.  
2019
- **Illumination compensation of shadow zones in extended least squares migrated images by solving the linear inverse problem in tomographic full waveform inversion** *89th SEG Annual International Meeting*  
Sarkar, R., Biondi, B.  
2019: 4297–4301
- **Seismic velocity estimation: a deep recurrent neural-network approach** *Geophysics*  
Fabien-Ouellet, G., Sarkar, R.  
2019; 85 (6): 1--35
- **On sets of commuting and anticommuting Paulis** *arXiv*  
Sarkar, R., Berg, E. v.  
2019
- **Snell tomography for net-to-gross estimation using quantum annealing** *SEG 88th Annual Meeting*  
Sarkar, R., Levin, S.  
2018: 5078–82