

# Stanford

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## Jacob Marks

Ph.D. Student in Physics, admitted Autumn 2017

### Bio

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#### BIO

Stanford Physics PhD candidate in Tom Devereaux's lab (Co-Advised by Xiaoliang Qi) conducting research on quantum phases of matter, with a focus on topology.

Quantum Student Contributor @ Physics World.

Previously:

- Quantum @ Google X
- Algorithms Research @ Samsung Think Tank Team (TTT)
- Research Fellow @ Wolfram Research
- Research @ Institute for Quantum Computing (IQC) under Michele Mosca
- Research @ Yale Quantum Institute (YQI) under Liang Jiang.

BS '17 Yale, Cum Laude in Intensive Physics, and Mathematics & Philosophy, with distinction in both majors.

#### HONORS AND AWARDS

- Cum Laude, Yale University (2017)
- Howard L. Schultz Award, Department of Physics, Yale University (2017)
- Honorable Mention, Goldwater Foundation (2016)
- Richter Fellow, Yale University (2016)
- Undergraduate Research Award, Institute for Quantum Computing, University of Waterloo (2016)
- Silver Medal, International University Physics Competition (2015)
- Tetelman Research Fellow, Yale University (2014)

#### EDUCATION AND CERTIFICATIONS

- B.S., Yale University, Intensive Physics, Mathematics and Philosophy (2017)

#### LINKS

- Personal Site: <http://www.silhouetteofscience.com/>
- LinkedIn: <https://www.linkedin.com/in/jacob-marks>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Quantum Computing, Condensed Matter Theory and Machine Learning.

## Professional

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### WORK EXPERIENCE

- Quantum Resident @ X, the Moonshot Factory - X, the Moonshot Factory (August 26, 2019 - present)
- Algorithms R&D @ Wolfram Research - Wolfram Research
- Algorithms Research @ Samsung Think Tank Team (TTT) - Samsung Think Tank Team (TTT) (5/26/2020 - 12/18/2020)

## Publications

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### PUBLICATIONS

- **Gauge invariance of light-matter interactions in first-principle tight-binding models** *PHYSICAL REVIEW B*  
Schueler, M., Marks, J. A., Murakami, Y., Jia, C., Devereaux, T. P.  
2021; 103 (15)
- **Correlation-Assisted Quantized Charge Pumping** *Physical Review B*  
Marks, J., Schüler, M., Budich, J. C., Devereaux, T. P.  
2021; 103 (3): 035112
- **Dynamical signatures of symmetry protected topology following symmetry breaking** *Physical Review Research*  
Marks, J. A., Schüler, M., Devereaux, T. P.  
2021; 3 (2)
- **Quantum Hamiltonian-Based Models and the Variational Quantum Thermalizer Algorithm** *ArXiv*  
Verdon, G., Marks, J., Nanda, S., Leichenauer, S., Hidary, J.  
2019
- **Comparison of memory thresholds for planar qudit geometries** *New Journal of Physics*  
Marks, J. A., Jochym-O'Connor, T., Gheorghiu, V.  
2017; 19 (113001-119502)