

# Stanford

---



## Vishal Patil

Postdoctoral Scholar, Bioengineering

### Bio

---

#### BIO

Vishal Patil is currently a Stanford Science Fellow at Stanford University. Incorporating ideas from mathematics to biology, his work aims to understand how topology and geometry can be used to organize and control soft matter systems. His current research at Stanford concerns adaptive, heterogeneous metamaterials, with a focus on understanding their capacity to exhibit self-learning behavior.

#### HONORS AND AWARDS

- Stanford Science Fellow, Stanford University (2021)
- MathWorks Science Fellowship, MIT School of Science (2020)
- MIT Presidential Fellowship, MIT (2016)

#### PROFESSIONAL EDUCATION

- Master of Mathematics, University of Cambridge (2016)
- Bachelor of Arts, University of Cambridge (2016)
- Doctor of Philosophy, Massachusetts Institute of Technology (2021)
- Bachelor of Arts, University of Cambridge , Mathematics (2015)
- Master of Mathematics, University of Cambridge , Mathematics (2016)
- Doctor of Philosophy, Massachusetts Institute of Technology , Applied mathematics (2021)

#### STANFORD ADVISORS

- Manu Prakash, Postdoctoral Faculty Sponsor

#### LINKS

- Google Scholar: <https://scholar.google.com/citations?user=0ljf0t0AAAAJ&hl=en>

### Publications

---

#### PUBLICATIONS

- **Chiral edge modes in Helmholtz-Onsager vortex systems** *PHYSICAL REVIEW FLUIDS*  
Patil, V. P., Dunkel, J.  
2021; 6 (6)
- **Discharging dynamics of topological batteries** *PHYSICAL REVIEW RESEARCH*  
Patil, V. P., Kos, Z., Ravnik, M., Dunkel, J.

2020; 2 (4)

- **Topological mechanics of knots and tangles** *SCIENCE*

Patil, V. P., Sandt, J. D., Kolle, M., Dunkel, J.

2020; 367 (6473): 71-+

- **Controlling fracture cascades through twisting and quenching** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Heisser, R. H., Patil, V. P., Stoop, N., Villermaux, E., Dunkel, J.

2018; 115 (35): 8665-8670