Gokul G. Nair

Center For Applied Mathematics
Cornell University, NY
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EDUCATION

Ph.D. in Applied Mathematics 2018 - present
Cornell University, Ithaca, NY, United States
Advisor: Timothy Healey, Department of Mathematics
Expected completion: 2024

Masters in Applied Mathematics 2018-2021
Cornell University, Ithaca, NY, United States
Minors: Mathematics, Theoretical Physics

Bachelor of Science (First Class with Distinction) 2014 - 2018
Indian Institute of Science, Bangalore, India
Major: Physics

RESEARCH INTERESTS

Calculus of Variations, Nonlinear Elasticity, Geometric Analysis, Minimal Surfaces, Complex systems

HONOURS

First Class with Distinction, Indian Institute of Science 2018

S.N. Bose Fellowship, Indo-U.S. Science and Technology Forum 2017

KVPY Fellowship, Government of India 2014

RESEARCH PUBLICATIONS

1. *Energy Minimizing Configurations for Highly Deformable Single-Director Elastic Surfaces*, Timothy J. Healey, Gokul G. Nair. `arXiv:2208.09051` (2022)

2. *Energy-Minimizing States for Nonlinearly Elastic Membranes on Prescribed Surfaces* (with T. Healey), working manuscript (2022)

3. *Designing for Robustness in Electric Grids via a General Effective Resistance Measure*, Shriya V. Nagpal, Gokul G. Nair, Francesca Parise, and C. Lindsay Anderson. (submitted to IEEE) `arXiv:2201.00929` (2022).
4. *Fission-fusion dynamics and group-size-dependent composition in heterogeneous populations*, Gokul G. Nair, Athmanathan Senthilnathan, Srikanth K. Iyer, and Vishwesha Guttal. Physical Review E (2019)

TEACHING EXPERIENCE

- Calculus II, Instructor (Fall 2022)
- Partial Differential Equations, Grader (Spring 2022)
- Differential Equations for Engineers, TA (Fall 2021)
- Honours Introduction to Analysis I, Grader (Fall 2020)
- Multivariable Calculus, TA (Spring 2020)
- Differential Equations for Engineers, TA (Fall 2019)

- Multivariable calculus for Engineers, TA (Fall 2018 - Spring 2019)

TALKS

- Proving the Uniformization theorem using Ricci flow, Dynamics Seminar, Cornell University (2020)
- Introduction to Curvature, Applied Mathematics Student Seminar, Cornell University (2020)
- Schoen and Yau's proof of the Positive Mass theorem, Applied Dynamics Seminar, Cornell University (2021)
- On the Dynamics of Power Grids, Applied Dynamics Seminar, Cornell University (2022)
- Energy Minimizing Configurations for Highly Deformable Elastic Surfaces, Horizons in Nonlinear PDEs school, University of Ulm (2022)

SERVICE

- President, Cornell SIAM chapter (2021-2022)
- Expanding Your Horizons (EYH), Cornell University (2022)
- Teaching Development Fellow, Cornell Department of Mathematics (Fall 2022)
- Organizer, Applied Mathematics Student Seminar (2020-2022)
- Mentor, Directed Reading Programme, Cornell Department of Mathematics (2020-2022)

COMPUTER LANGUAGES

C, C++, Python (Numpy, Scipy), Mathematica, LaTeX