Vikash Chaurasia

Contact Information	Mathematics, Mechanics, and Materials Unit Okinawa Institute of Science and Technology 1919-1 Tancha, Onna-son, Kunigami-gun Okinawa, Japan 904-0495	*Voice:* +817026262282 *E-mail:* vikash.chaurasia2@oist.jp

Education

University of Houston - Texas, USA

Ph.D., Mechanical engineering, August, 2018

Advisors: Prof. Yi-Chao Chen and Prof. Eliot Fried

Indian Institute of Technology, Kanpur, India

B.Tech., Mechanical Engineering, June, 2010
M.S., Mechanical Engineering, August, 2012

Research Interests

Continuum Mechanics, Unstretchable, flexible materials, Biophysics, Differential geometry, Numerical methods

Skills

MATLAB, Python, C++, Blender, Javascript, Web based visualization

Research experience

Postdoc, Mathematics, Mechanics, and Materials Unit, OIST, September 2018–Present

Selected Publications

V. Chaurasia, E. Fried. Möbius bands obtained by isometrically deforming circular helicoids, *Journal of Elasticity*, 2023

V. Chaurasia, Y.C. Chen, E. Fried. Interacting charged elastic loops on a sphere, *Journal of the Mechanics and Physics of Solids*, 2020

V. Chaurasia, M.A. Kanso, E.Fried, and A.J. Giacomin. Coronavirus Peplomer Charge Heterogeneity, *Physics of Fluids*, 2023

M.A. Kanso, **V. Chaurasia**, E. Fried, and A.J. Giacomin. Peplomer bulb shape and coronavirus rotational diffusivity, *Physics of Fluids*, 2021

S. D. Janssens , **V. Chaurasia**, and E. Fried. Effect of a surface tension imbalance on a partly submerged cylinder, *Journal of Fluid Mechanics*, 2017

Data Science courses

Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks, and Sequence Models. Platform: Coursera, Instructor: *Andrew N.g.*

Data Structures and Algorithms Essentials using C++. Platform: Udemy, Instructor: *Prateek Narang.*

Workshop &Conferences

1. Origami and Deployable Mechanisms - OIST, June, 2019
2. Discrete Differential Geometry - Short course, American Mathematical Society (AMS), January, 2018
3. CoMFoS17 International Conference on Mathematical Analysis of Continuum Mechanics, September, 2017

4. OIST Mini Symposium: Viscoelasticity and Dissipative Dynamics of Rods and Membranes, March, 2017
5. Society of Engineering Science (SES)-University of Maryland, October 2016
6. Physically-Based Modeling of Polyatomic Gases and Phase Transitions - OIST, Japan, July 2016
7. Non-local variational problems and PDEs, Pacific Institute of Mathematical Sciences -UBC, Vancouver, June 2016
8. Geometry, Elasticity and 2D fluctuations-Kavli Institute of Theoretical Physics, UC Santa Barbara, May 2016
9. Society of Engineering Science (SES)-Purdue University, October 2014
10. International Institute of Theoretical Sciences (ICTS) - IIT Kanpur, November 2011

Awards & Achievements

1. Travel award, Pacific Institute of Mathematical Sciences, 2016
2. International Exchange student to Okinawa Institute of Science and Technology (OIST), Japan, September 2015-2018
3. Kalsi scholarship, University of Houston, 2014
4. Presidential fellow, University of Houston, 2013
5. Texas Public Education Grant (TPEG) for International students, 2013, 2014

Courses

Advanced Variational Calculus	Contact Mechanics
Asymptotic methods and Perturbation Theory	Continuum Mechanics
Hamiltonian Mechanics and Symplectic Algorithms	Advanced Mechanics of Solids
Fundamentals of Computing	Programming and Numerical Analysis
Dynamics and Vibration of Machinery	Theory of Machines
Finite Element Analysis	Mathematical Modelling
Linear Algebra	Real analysis