

## EDUCATION

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- University of New Hampshire (UNH)** Durham, NH, USA  
Ph.D. in Applied Mathematics, GPA: 3.96/4.00, Advisor: Prof John F Gibson 2018–2023 (expected)  
– Thesis: “Role of Symmetry and Exact Coherent Structures in Transition to Turbulence in Shear Flows”
- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)** Bengaluru, India  
M.S. in Engineering Mechanics, GPA: 6.90/8.00, Advisor: Prof M Alam 2015–2018  
– Thesis: “Pattern Formation and Anomalous Modes in Axisymmetric Compressible Taylor-Couette Flow”
- Birla Institute of Technology and Science (BITS) Pilani** Pilani, India  
B.E.(Hons.) in Mechanical Engineering, GPA: 8.25/10.00 2011–2015  
– Thesis: “Investigation of Turing Patterns Using Finite Element Method and Symmetry”

## PUBLICATIONS

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- [1] **P. Aghor** and M. Atif, “Radially heated Taylor-Couette flow”, *to be submitted to the Physical Review Fluids*, vol. ??, 2023.
- [2] **P. Aghor** and J. F. Gibson, “Edge states of plane Poiseuille flow”, *to be submitted to the Physical Review Fluids*, vol. ??, 2023.
- [3] **P. Aghor** and J. F. Gibson, “Invariant symmetric subspaces of plane Poiseuille flow”, *to be submitted to the Journal of Fluid Mechanics*, vol. ??, 2023.
- [4] R. Mushtaq and **P. Aghor**, “Thermally stratified porous plane Couette flow”, *to be submitted to the Journal of Fluid Mechanics*, vol. ??, 2023.
- [5] **P. Aghor** and M. Alam, “Nonlinear axisymmetric Taylor-Couette flow in a dilute gas: Multiroll transition and the role of compressibility”, *Journal of Fluid Mechanics*, vol. 909, 2021.

## TEACHING

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- **Teaching Assistant** at UNH 2018 –2019, 2021–2022  
*Linearity (covers ODE’s, linear algebra, phase plane analysis), Multidimensional Calculus*
- **Teaching Assistant** at BITS Pilani 2015  
*Finite Element Method (ME G512)*

## SCHOLARSHIPS AND AWARDS

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- **Dissertation Year Fellowship, UNH Graduate School Award** 2022–2023
- **Departmental Nominee, Graduate School TA Teaching Award** 2021–2022, 2022–2023
- **Research Assistant** 2019–2021
- **R. Narasimha Award for the Best MS Thesis in Engineering Mechanics** 2017–2018

## CONFERENCES, WORKSHOPS, SUMMER SCHOOLS

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### Dynamics days US 2023

Jan 2023

Online

- Poster presentation titled: ‘Codimension-two bifurcation in plane Couette flow’

### Boulder Summer School - Hydrodynamics Across Scales

Jul 2022

University of Colorado

Boulder, Colorado, USA

- Poster presentation titled: ‘Invariant Subspaces of Channel Flow’

### Visiting Graduate-Student Researcher

Jun 2022

JNCASR

Bengaluru, Karnataka, India

- Gave a talk on ‘Symmetry, Dynamics and the Method of Slices’

### APS-DFD Meeting

Nov 2021

Phoenix Convention Center

Phoenix, Arizona, USA

- Gave a talk on ‘Exploring Invariant Symmetry Subspaces of Channel Flow’

### School on Dynamics of Complex Systems

May-Jun 2016

International Center for Theoretical Sciences (ICTS, Bangalore)

Bengaluru, Karnataka, India

- Theme - Geophysical Fluid Dynamics

### CIMPA Summer School on Current Research in Finite Element Method

Jun-Jul 2015

Indian Institute of Technology (IIT, Bombay)

Mumbai, Maharashtra, India

- Conducted tutorial sessions on FreeFem++

### Finite Element Meet 2014

Dec 2014

Tata Institute of Fundamental Research (TIFR-CAM)

Bengaluru, Karnataka, India

- Gave a talk on ‘Numerical Continuation and Bifurcation in Presence of Symmetry in FreeFem++’

## RELEVANT COURSEWORK

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Fluid Mechanics, Asymptotics and Perturbation Methods, Physical Oceanography, Geophysical Fluid Dynamics, Spatiotemporal and Turbulent Dynamics, Algebra I (Group and Ring Theory), Waves in Fluids, Nonlinear Vibrations, Electrodynamics, Theory of Relativity, Statistical Mechanics, Mathematical Physics, High Performance Computing, Numerical Linear Algebra, Numerical PDE's, Chaosbook Part 1 and 2.

## TEST SCORES

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- **All India Rank: 7 out of 3292 candidates** in GATE 2015, Engineering Sciences

## SKILLS

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- **Languages:** Python, Julia, MATLAB, C++, C, FORTRAN
- **Open Source Solvers:** FreeFem++, Dedalus, Channelflow, AUTO -07p
- **Miscellaneous:** OpenMP, MPI, High Performance Computing, Scientific Computing

## EXTRACURRICULAR ACTIVITIES (SPORTS, WRITING AND OUTREACH)

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- **BITS Pilani University Taekwondo Team** 2014–2015  
*Gold Medal in BOSM 2015, Bronze Medal in BOSM 2014*
- Wrote a **Ted-Ed Script (at UNH) - The greatest mathematician that never lived** Jul 2020  
[\*Video\*](#), [\*Transcript\*](#)
- Wrote an article for ***Loksatta***, a state-wide prominent Marathi language Newspaper about **Black Lives Matter Protests and Stripping the Pride off Columbus (at UNH)** Jun 2020  
[\*Link\*](#)
- Wrote an article for ***Loksatta***, a state-wide prominent Marathi language Newspaper about the **SIR Model of Epidemiology (at UNH)** Apr 2020  
[\*Link\*](#)
- Volunteer at the **Student Mentoring Program at JNCASR** 2017, 2018  
*Taught 11<sup>th</sup> – 12<sup>th</sup> standard physics and mathematics to economically backward students.*

## REFERENCES:

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1. Prof. John F. Gibson (john.gibson@unh.edu)
2. Prof. Gregory P. Chini (greg.chini@unh.edu)
3. Prof. Meheboob Alam (meheboob@jncasr.ac.in)