

EXPERIENCE

Georgia Institute of Technology (GT)

Postdoctoral fellow in Earth and Atmospheric Sciences

Atlanta, GA, USA

Oct. 2023 –Current

- Focus: “Interaction of ocean currents and seamounts”

EDUCATION

University of New Hampshire (UNH)

Durham, NH, USA

Ph.D. in Applied Mathematics, GPA: 3.96/4.00, Advisor: Prof John F Gibson

- Thesis: “Symmetries, Bifurcations and Transition to Turbulence”

Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)

Bengaluru, India

M.S. in Engineering Mechanics, GPA: 6.90/8.00, Advisor: Prof M Alam

- 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

- Thesis: “Investigation of Turing Patterns Using Finite Element Method and Symmetry”

PUBLICATIONS

- [1] **P. Aghor** and J. F. Gibson, “Invariant symmetric subspaces of plane Poiseuille flow”, *under review*, 2025.
- [2] **P. Aghor**, M. McKinley, and A. Bracco, “Interaction of ocean currents and seamounts: Role of bottom topography around Atlantis II”, *under review*, 2025.
- [3] **P. Aghor**, M. McKinley, A. Bracco, and K. G. Sabra, “Effect of bottom topography on sound propagation near the Atlantis II seamount”, *under prep.*, 2025.
- [4] M. Atif, P. Dubey, **P. Aghor**, V. López-Marrero, T. Zhang, A. Sharfuddin, K. Yu, F. Yang, F. Ladeinde, Y. Liu, *et al.*, “Fourier neural operators for spatiotemporal dynamics in two-dimensional turbulence”, in *SC24-W: Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, IEEE, 2024, pp. 41–48.
- [5] **P. Aghor** and M. Atif, “Effect of outer cylinder rotation on the radially heated Taylor-Couette flow”, *Physics of Fluids*, vol. 35, no. 9, 2023.
- [6] **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

- **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

- Department of Mathematics and Statistics Teaching Assistant Award, UNH 2022–2023
- 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

Acoustical Society of America joint with International Congress on Acoustics May 2023
New Orleans, LA, USA

- Gave a talk on ‘Effect Of Bottom Topography On Sound Propagation Near The Atlantis II Seamount’

Rosbypalooze Jul 2024
University of Chicago

- Worked with Prof. William Boos (UC Berkley) on tropical stationary waves
- Worked with Prof. Da Yang and Prof. Dorian Abbot (UChicago) on a reduced model of extreme tropical precipitation

APS-DFD Meeting Nov 2023
Washington Convention Center Washington, DC, USA

- Gave a talk on ‘Instability Islands in the Radially Heated Taylor-Couette Flow’

Boulder Summer School - Hydrodynamics Across Scales Jul 2022
University of Colorado Boulder, Colorado, USA

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

Visitng 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

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

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

SKILLS

- **Languages:** Python, Julia, MATLAB, C++, C, FORTRAN
- **Open Source Solvers:** FreeFem++, Dedalus, Channelflow, AUTO -07p, Tensorflow
- **Miscellaneous:** OpenMP, MPI, high performance computing, scientific computing, machine learning, ocean models

EXTRACURRICULAR ACTIVITIES (SPORTS, WRITING AND OUTREACH)

- **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 the **SIR Model of Epidemiology (at UNH)** Apr 2020
[Link](#)
- Volunteer at the **Student Mentoring Program at JNCASR** 2017, 2018
Taught 11th – 12th standard physics and mathematics to economically backward students.

Languages and Music

Proficient in: **Marathi, Hindi, English, Sanskrit**, Beginner level: **French**; Proficient in: Indian classical percussion **Tabla**, Intermediate: **Ukulele**.

REFERENCES:

1. Prof. John F. Gibson (john.gibson@unh.edu)
2. Prof. Gregory P. Chini (greg.chini@unh.edu)
3. Prof. Annalisa Bracco (annalisa.bracco@cmcc.it/annalisa@eas.gatech.edu)