Stanford

Karthik Menon

Postdoctoral Scholar, Cardiology

Bio

BIO

Karthik Menon is a postdoctoral scholar in the Cardiovascular Biomechanics Computation Laboratory at Stanford University, advised by Alison Marsden. His current research involves the development of computational methods for accurate patient-specific cardiovascular blood flow simulations and uncertainty quantification. He graduated with a Ph.D. in Mechanical Engineering from Johns Hopkins University in 2021, where his doctoral work focused on the flow physics of fluid-structure interactions. His broad research interests include fluid mechanics, computational modeling and data-driven methods.

HONORS AND AWARDS

- Mark O. Robbins Prize in High-Performance Computing, Johns Hopkins University (2021)
- Corrsin-Kovasznay Outstanding Paper Award, Center for Environmental and Applied Fluid Mechanics, Johns Hopkins University (2020)
- Prosperetti Travel Award, Johns Hopkins University (2017)
- Departmental Fellowship, Mechanical Engineering, Johns Hopkins University (2016)
- Summer Research Fellowship, Indian Academy of Sciences (2014)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Johns Hopkins University (2021)
- Master of Science, Johns Hopkins University (2019)
- Bachelor of Engineering, Birla Institute of Technology and Science (2015)

STANFORD ADVISORS

- Alison Marsden, Postdoctoral Faculty Sponsor

LINKS

- Google Scholar: https://scholar.google.com/citations?user=CmIqL14AAAAJ&hl=en

Publications

PUBLICATIONS

- **Significance of the strain-dominated region around a vortex on induced aerodynamic loads** *JOURNAL OF FLUID MECHANICS*
  Menon, K., Mittal, R.
  2021; 918
- **On the initiation and sustenance of flow-induced vibration of cylinders: insights from force partitioning** *JOURNAL OF FLUID MECHANICS*
  Menon, K., Mittal, R.

2021; 907

- **Quantitative analysis of the kinematics and induced aerodynamic loading of individual vortices in vortex-dominated flows: a computation and data-driven approach** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Menon, K., Mittal, R.
  2021; 443

- **Aeroelastic response of an airfoil to gusts: Prediction and control strategies from computed energy maps** *JOURNAL OF FLUIDS AND STRUCTURES*
  Menon, K., Mittal, R.
  2020; 97

- **Dynamic mode decomposition based analysis of flow over a sinusoidally pitching airfoil** *JOURNAL OF FLUIDS AND STRUCTURES*
  Menon, K., Mittal, R.
  2020; 94

- **Aerodynamic Characteristics of Canonical Airfoils at Low Reynolds Numbers** *AIAA JOURNAL*
  Menon, K., Mittal, R.
  2020; 58 (2): 977-980

- **Flow physics and dynamics of flow-induced pitch oscillations of an airfoil** *JOURNAL OF FLUID MECHANICS*
  Menon, K., Mittal, R.
  2019; 877: 582-613

- **Phase separation and coexistence of hydrodynamically interacting microswimmers** *SOFT MATTER*
  Blaschke, J., Maurer, M., Menon, K., Zoettl, A., Stark, H.
  2016; 12 (48): 9821-9831

- **Attraction-induced jamming in the flow of foam through a channel** *SOFT MATTER*
  Menon, K., Govindarajan, R., Tewari, S.
  2016; 12 (37): 7772-7781