Stanford

Mrudang Mathur

Postdoctoral Scholar, Thoracic Surgery

Bio

BIO

Mrudang Mathur is a Postdoctoral Scholar in the Department of Cardiothoracic Surgery working with Dr. William Hiesinger. He received his B.Tech in Mechanical Engineering from Delhi Technological University before completing his PhD in Mechanical Engineering at the University of Texas at Austin under the supervision of Dr. Manuel K. Rausch. His research interests include cardiovascular biomechanics, computational science, image processing, and scientific visualization.

HONORS AND AWARDS

- SES Future Faculty Travel Award, Society of Engineering Science (2025)
- USNCCM18 Travel Award, US Association for Computational Mechanics (2025)
- AHA Predoctoral Fellowship, American Heart Association (1/2022-12/2023)
- Dean's Prestigious Fellowship Supplement, The University of Texas at Austin (2023,2022)
- USNCCM17 Travel Award, US Association for Computational Mechanics (2023)
- Annual Meeting Travel Award, Society of Engineering Science (2022)
- Warren A. & Alice L. Meyer Scholarship in Engineering, The University of Texas at Austin (2021,2019)
- Summer Research Fellowship, Nanyang Technological University (2017)
- International Additive Manufacturing Challenge - Best Reengineered Product, ASME (2016)
- Merit Scholarship, Delhi Technological University (2014)
- DST INSPIRE Scholarship (declined), Government of India (2014)

PROFESSIONAL EDUCATION

- PhD, The University of Texas at Austin , Mechanical Engineering (2024)
- BTech, Delhi Technological University , Mechanical Engineering (2018)

STANFORD ADVISORS

- William Hiesinger, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **A generalizable deep learning system for cardiac MRI.** *Nature biomedical engineering*
  Shad, R., Zakka, C., Kaur, D., Mathur, M., Fong, R., Cho, J., Filice, R. W., Mongan, J., Kallianos, K., Khandwala, N., Eng, D., Leipzig, M., Witschey, et al

2026

- **Sex disparities in deep learning estimation of ejection fraction from cardiac magnetic resonance imaging.** *NPJ digital medicine*
  Kaur, D., Shad, R., Kumar, A., Mathur, M., Cho, J., Fong, R., Zakka, C., Phillips, C., Hiesinger, W.
  2026

- **Tricuspid valve leaflet remodeling in sheep with biventricular heart failure: A comparison between leaflets.** *Acta biomaterialia*
  Kostelnik, C. J., Meador, W. D., Lin, C., Mathur, M., Malinowski, M., Jazwiec, T., Malinowska, Z., Piekarska, M. L., Gaweda, B., Timek, T. A., Rausch, M. K.
  2025

- **Tricuspid valve edge-to-edge repair simulations are highly sensitive to annular boundary conditions.** *Journal of the mechanical behavior of biomedical materials*
  Haese, C. E., Dubey, V., Mathur, M., Pouch, A. M., Timek, T. A., Rausch, M. K.
  2024; 163: 106879

- **Leaflet remodeling reduces tricuspid valve function in a computational model** *JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS*
  Mathur, M., Malinowski, M., Jazwiec, T., Timek, T. A., Rausch, M. K.
  2024; 152: 106453

- **Geometric data of commercially available tricuspid valve annuloplasty devices** *DATA IN BRIEF*
  Haese, C. E., Mathur, M., Malinowski, M., Timek, T. A., Rausch, M. K.
  2024; 52: 110051