Krishnanunni C G

PhD student (Dept of Aerospace Engineering)
University of Texas at Austin, USA
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EDUCATION

University of Texas at Austin, USA 2021-Present
Ph.D. in Engineering Mechanics

- Cumulative **GPA: 3.95 / 4.0**

Indian Institute of Technology Madras, India 2017-2019
MS in Structural Engineering

- Cumulative **GPA: 9.41 / 10**

National Institute of Technology Calicut, India 2013-2017
B. Tech in Civil Engineering

- Cumulative **GPA: 9.15 / 10**

FELLOWSHIPS, SCHOLARSHIPS, AND AWARDS

- **Innovation in Science Pursuit for Inspired Research (INSPIRE) scholarship**, Central government of India. 2013
- **Summer research fellowship**, Department of mathematics, IISc, Indian Academy of Science. 2015
- **Best Major B. Tech project award**, National Institute of Technology, Calicut, India. 2017
- **Outstanding B. Tech project award**, Association of Engineers, Kerala, India. 2017
- **Best MS Thesis award** in Structural Engineering, Indian Institute of Technology Madras. 2020
- **Travel Award** by the Society for Industrial and Applied Mathematics (SIAM), Annual Meeting of the SIAM Texas-Louisiana Section, Houston, USA. 2022
- **Travel Award** by the United States Association for Computational Mechanics (USACM), United States National Congress on Computational Mechanics, Albuquerque, USA. 2023

RECENT JOURNAL PUBLICATIONS

- **C. G. Krishnanunni.,** Tan Bui-Thanh. Layerwise sparsifying training and sequenctial learning strategy for neural architecture adaptation. (Link)
- Albert Orwa Akuno., L. Leticia Ramirez-Ramirez., Chahak Mehta., **C. G. Krishnanunni.,** Tan Bui-Thanh., Jose Arturo Montoya (2022). Multi-patch epidemic models with partial mobility, residency, and demography. *Submitted to Journal of Mathematical Biology*. (Link)
- Jonathan Wittmer., **C. G. Krishnanunni.**, Hai Van Nguyen., Tan Bui-Thanh (2023). On Unifying Randomized Methods for Inverse Problems. *Inverse Problems (Under review)*. (Link)
- **C. G. Krishnanunni.,** B. N. Rao., (2021). Indirect health monitoring of bridges using Tikhonov regularization scheme and signal averaging technique. *Structural Control and Health Monitoring*. 28(3).
- **C. G. Krishnanunni.,** B. N. Rao., (2019). Decoupled technique for dynamic response of vehicle-pavement systems. *Engineering Structures*. 191, 264-279.

RECENT INVITED TALKS

- **C. G. Krishnanunni**., Tan Bui-Thanh., (2022). Layerwise sparsifying training and sequential learning strategy for neural architecture adaptation. *SIAM Conference on Uncertainty Quantification*, Atlanta, April 12-15. 2022

RECENT RESEARCH INVESTIGATIONS

- **Developing efficient algorithms for neural architecture adaptation** 2022-Present
  Advisor: Prof. Tan Bui-Thanh
  - Research aimed at developing a method for automatically determining neural network architecture for a given data-set.
- **A new look at the Ensemble Kalman filter via duality** 2022-Present
  Advisor: Prof. Tan Bui-Thanh
  - Research aimed at analysing EnKF mathematically from a different view point in order to get insights into new convergence improvement strategies.
- **Indirect health monitoring strategy for bridges** 2017-2019
  Advisor: Prof. B. N. Rao (MASTER'S THESIS)
  - Research aimed at developing a framework for **damage detection in bridges** based on dynamic response of a passing vehicle where the vehicle acts as a moving sensor.
- **Fast and accurate damage detection algorithm for structures using vibration data.** 2017
  Advisor: Dr. Sajith A. S and Dr. Mohammed Ameen (BACHELOR'S THESIS)
  - Research aimed at developing a computationally fast and accurate technique to detect and quantify structural damage based on vibrational characteristics.
- **Mathematics of Nonlinear Hyperbolic Waves and Compressible Fluids** 2015
  Guide: Prof. Phoolan Prasad, (IISc Bangalore) (RESEARCH FELLOWSHIP)
  - Mathematical review of the properties of nonlinear hyperbolic waves and compressible fluids.

MENTORSHIP

- **Moncrief Summer Internship mentor**
  - Mentored a summer intern on the work titled "Physics informed deep-learning approach enhanced by POD for forecasting solutions to time-dependent PDE's".
- **SIAM-UT Mentorship program**
  - Mentored a student on an applied math project related to machine learning for nonlinear dimension reduction.

PROFESSIONAL EXPERIENCE

- **Teaching Assistant**, *University of Texas at Austin*, USA 2021-2022
  - Teaching assistant for course, Analytical methods, Mathematical methods in Engineering.
- **Graduate Research Assistant**, *University of Texas at Austin*, USA 2021-Present
  - Research Assistant to Prof. Tan Bui-Thanh, Institute of Computational Engineering and Sciences.

- **Teaching Assistant**, *Indian Institute of Technology Madras,* Chennai 2017-2019
  - Teaching assistant for courses: Structural optimization and Finite element analysis.

JOURNAL ROLES

- **Peer Reviewer,** *Applied Ocean Research,* Elsevier.

SKILLS

Software: ANSYS ®, MATLAB®, STAAD ®, LaTeX®, AutoCAD®, ORIGIN®
Programming Languages: C++, Java, Python
Linguistics: English, Malayalam, Tamil

REFERENCES

- **Tan Bui-Thanh**
  Associate Professor,
  Leader of Pho-Ices group
  Department of Aerospace Engineering and Engineering Mechanics
  The Oden Institute for Computational Engineering and Sciences
  The University of Texas at Austin
  Austin, USA
  tanbui@ices.utexas.edu
- **B. Nageswara Rao**
  Professor
  Structural Engineering Laboratory
  Indian Institute of Technology Madras
  Chennai, PIN 600036, India
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- **Kentaro Yaji**
  Assistant Professor
  Design Engineering Lab
  Department of Mechanical Engineering
  Osaka University
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