



## Krishnanunni C G

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

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### EDUCATION

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| <b>University of Texas at Austin, USA</b><br>Ph.D. in Engineering Mechanics            | 2021-Present |
| • Cumulative GPA: 4.0 / 4.0  |              |
| <b>Indian Institute of Technology Madras, India</b><br>MS in Structural Engineering    | 2017-2019    |
| • Cumulative GPA: 9.41 / 10  |              |
| <b>National Institute of Technology Calicut, India</b><br>B. Tech in Civil Engineering | 2013-2017    |
| • Cumulative GPA: 9.15 / 10  |              |

### FELLOWSHIPS, SCHOLARSHIPS, AND AWARDS

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| • <b>Innovation in Science Pursuit for Inspired Research (INSPIRE) scholarship</b> , Central government of India. | 2013 |
| • <b>Summer research fellowship</b> , Indian Academy of Science.  | 2015 |
| • <b>Best Major B. Tech project award</b> , National Institute of Technology, Calicut, India.                     | 2017 |
| • <b>Outstanding B. Tech project award</b> , Association of Engineers, Kerala, India.                             | 2017 |
| • <b>Best MS Thesis award</b> in Structural Engineering, Indian Institute of Technology Madras.                   | 2020 |

### RECENT JOURNAL PUBLICATIONS

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- Shereena O. A., C. G. Krishnanunni., B. N. Rao., (2022). Simultaneous state-input-stiffness estimation for nonlinear duffing oscillators avoiding Jacobian linearization. *International Journal of Structural Stability and Dynamics*, [IJSSD](#).
- 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\(3\)](#).

### RECENT INVITED TALKS

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| • C. G. Krishnanunni, Inverse problems in vehicle-bridge interaction dynamics, <i>Global Meet on Civil, Structural and Environmental Engineering</i> , Dubai, October 10-12.  | 2022 |
| • C. G. Krishnanunni., Tan Bui-Thanh., (2022). Layerwise sparsifying training and sequential learning strategy for neural architecture adaptation. <i>SIAM Conference on Uncertainty Quantification</i> , Atlanta, April 12-15. | 2022 |

## RECENT RESEARCH INVESTIGATIONS

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- **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 theoretical 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 and developed a finite difference scheme for the Newell whitehead Segel equation.

## MENTORSHIP

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- **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".

## PROFESSIONAL EXPERIENCE

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- **Teaching Assistant, University of Texas at Austin, USA** 2021-2022
  - Teaching assistant for course Analytical Methods.
- **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

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

## SKILLS

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**Software:** ANSYS<sup>®</sup>, MATLAB<sup>®</sup>, STAAD<sup>®</sup>, L<sup>A</sup>T<sub>E</sub>X<sup>®</sup>, AutoCAD<sup>®</sup>, ORIGIN<sup>®</sup>

**Programming Languages:** C++, Java, Python

**Linguistics:** English, Malayalam, Tamil

## REFERENCES

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- **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  
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- **B. Nageswara Rao**  
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