

Tushar M. Athawale

Computer Scientist, Computer Science and Mathematics Division,
Oak Ridge National Laboratory, Knoxville, TN

<https://www.ornl.gov/staff-profile/tushar-m-athawale>

Major Accomplishments

- Significant advances in visualization algorithms for reliable analysis of complex 2D/3D scientific data under uncertainty, integrating artificial intelligence, probability theory, topological analysis, and high-performance computing. Dr. Athawale is recognized for pioneering contributions to uncertainty analysis of isosurfaces—a widely used visualization technique—enabling trusted data analysis across diverse scientific domains.
- Recipient of the U.S. Department of Energy (DOE) Early Career Award (2025), providing \$2.75M in funding over five years to advance Dr. Athawale’s research on algorithmic innovations for uncertainty visualization.

Professional Experience Summary

Computer Scientist, Oak Ridge National Laboratory (ORNL), 2021-Present

Joint Faculty Assistant Professor, Department of Electrical Engineering and Computer Science, University of Tennessee Knoxville, 2023-Present

Postdoctoral Fellow, Scientific Computing & Imaging (SCI) institute, University of Utah, 2016-2021

Application Support Engineer, MathWorks, Inc., 2015–2016

Intern, Nvidia Corporation, India, 2009-2010

Education

2015 University of Florida, PhD in Computer Engineering

2014 University of Florida, MS in Computer Engineering

2010 University of Pune, India, BS in Computer Engineering

Selected Awards and Recognitions

Dr. Athawale is among 99 researchers across the U.S. to receive the highly competitive and prestigious U.S. DOE Early Career Award (2025) for his project “*VisTrust: Uncertainty Visualization of Univariate and Multivariate Scalar Data for Trusted Analysis and Discovery*”, highlighting the impact of his work and its strong alignment with national scientific priorities. He received a Special Award from the Computer Science and Mathematics Division (CSMD) at ORNL (2024) in recognition of his impactful research contributions through publications in the top-tier journal *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. Additionally, he has received Best Paper and Honorable Mention recognitions at leading venues, including the *IEEE Visualization Conference (2024–2025)*. He has been invited as an uncertainty visualization expert at top-ranked venues, including as an author on the 2022 DOE Visualization Workshop report, a panelist at *Supercomputing (2025)*, and a speaker at Los Alamos National Lab (2018), Indian Institute of Science (2019), Dagstuhl Seminar (2022), and the University of Oklahoma (2025).

Selected Service

Dr. Athawale serves as a Program Chair for the *IEEE Visualization Conference (IEEE VIS)*—the premier and largest international conference in the field of data visualization (2025–2026). He is also an Associate Editor for the *IEEE TVCG*, a leading journal in visualization and computer graphics (impact factor: 6.5). In addition, he chaired the IEEE Uncertainty Visualization Workshops in 2024 and 2025. He has reviewed more than 100 papers through service on program committees for leading visualization conferences, including *IEEE VIS*, *IEEE PacificVis*, *EuroVis*, *IEEE TopInVis*, and *Eurographics*, and as a reviewer for several prominent journals such as *IEEE TVCG*, *Computer Graphics Forum*, *Computers & Graphics*, *IEEE Computer Graphics and Applications*, *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, and *The Visual Computer*.

Summary of Publications and Mentorship

Dr. Athawale is a *first author* on more than 10 publications in uncertainty visualization, nine of which appear in the prestigious *IEEE TVCG*. In total, he has authored over 50 peer-reviewed publications and refereed conference and workshop proceedings. He has mentored three undergraduate students through ORNL internship programs (2023-2025) and taught undergraduate and graduate courses at the University of Utah (2017-2019), with a strong focus on developing the next generation of the STEM workforce.