

Yan Wang, Ph.D.
Professor & George W. Woodruff Faculty Fellow
Georgia Institute of Technology

Yan Wang is a Professor of Mechanical Engineering and leads the Multiscale Systems Engineering Research Group at the Georgia Institute of Technology. The research of the group is at the intersection of design, manufacturing, and materials. His research interests include modeling & simulation, design optimization, uncertainty quantification, physics-informed machine learning, and quantum scientific computing. He has published over 240 archived journal articles and peer-reviewed conference papers, including the ones with best paper awards at the American Society of Mechanical Engineers (ASME) Computers and Information in Engineering (CIE) Conference, ASME Multibody Systems, Nonlinear Dynamics, & Control Conference, IEEE Quantum Computing & Engineering Conference, The Minerals, Metals & Materials Society (TMS) World Congress on Integrated Computational Materials Engineering, the Institute of Industrial and Systems Engineers (IISE) Industrial Engineering Research Conference, and the International Computer-Aided Design Conference. He is a recipient of the U.S. National Science Foundation (NSF) CAREER Award, a National Aeronautics and Space Administration (NASA) Faculty Fellow, and an ASME Fellow. He has been frequently invited to give lectures and seminars at universities in U.S., Europe, and Asia, as well as to review proposals for different countries. He was the Chair of ASME CIE Division and the Chair of ASME Advanced Modeling and Simulation Technical Committee. He served on the ASME Digitalization Technology Group and Intelligent Manufacturing Technology Group, as well as on the Workforce Technical Advisory Committee of the Quantum Economic Development Consortium. He is the current Editor-in-Chief of the ASME Journal of Computing & Information Science in Engineering.

Professor Wang received his B.S. degree from Tsinghua University, M.S. from Chinese Academy of Sciences, and Ph.D. from the University of Pittsburgh. His academic career started as a co-Principal Investigator to establish the NSF Industry-University Cooperative Research Center for e-Design in 2003 involving five U.S. universities and dozens of major U.S. manufacturers. As the Center's information infrastructure research thrust lead, he worked on research issues of product lifecycle management and collaborative engineering including interoperability, cybersecurity in manufacturing, and quantified constraint satisfaction problem to enhance design and manufacturing intelligence. In 2007, he initiated a new research area, computer-aided nano-design, which is to develop new models and descriptions of complex and porous structures at multiple length scales and enable integrated product-materials engineering. The developed novel periodic surface modeling for engineering design has now been widely adopted by tens of thousands of engineers and researchers worldwide in design porous structures, such as additively manufactured scaffolds, 3D print lattices and infills, metamaterials, and heat exchangers. Professor Wang also pioneered quantum scientific computing, which is to perform engineering simulation and optimization on quantum computer. His other work includes hybrid physics-based data-driven approaches for product, materials, and process design under uncertainty, such as scalable Bayesian optimization, physics-informed machine learning, and physics-based compressive sensing.