

Design Automation for Quantum Computing

Abstract: Quantum technologies offer promising advantages over classical counterparts in a variety of tasks, including faster computation, secure communication, and high-precision sensors. This talk will provide a comprehensive overview of both fundamental concepts and recent advances in design automation of quantum computing, including quantum algorithms, quantum compilation, quantum state preparation, quantum error correction, quantum machine learning, quantum measurement, quantum security, and validation of quantum systems.

Biography: Prabhat Mishra is a Professor in the Department of Computer and Information Science and Engineering and a UF Research Foundation Professor at the University of Florida. His research interests include quantum computing, hardware security, embedded systems, and trustworthy AI. He has published 9 books, 35 book chapters, 30 patents, and more than 250 research articles. He is an IEEE Fellow, a Fellow of the American Association for the Advancement of Science, and an ACM Distinguished Scientist.