ABSTRACT - Warehouse automation is increasing rapidly due to advances in technology, increases in ecommerce and inherent difficulties of large scale warehouse operations dominated by human operators. This automation leads to many interesting optimization problems. Some of these are typical routing and scheduling problems, while others are more unique. Working with a team led by Dr. Julian Yarkony (PhD CS, UCI 2012) we are developing a number of formulations and solution techniques which combine recent advances in column generation methods for large scale integer programs, classical multi-attribute pathfinding methods and well know metaheuristics to solve the rich problems in this domain.

SPEAKER BIO – Dr. Yayue Pan is an Associate Professor in the Department of Mechanical and Industrial Engineering at the University of Illinois at Chicago (UIC). Her research focuses on multi-material and multi-functional Additive Manufacturing processes for applications in anisotropic composites, sensing and actuating devices, energy management and storage. Dr. Pan holds a Ph.D. degree from the University of Southern California. Some of her recent awards include Outstanding Paper Award in 41st SME NAMRC conference, 2017 SME Outstanding Young Manufacturing Engineer Award, 2017 UIC College of Engineering Faculty Research Award, 2020 ASME CIE TC Leadership Award, and several awards from National Science Foundation of United States.