

EPSTEIN INSTITUTE SEMINAR ■ ISE 651

Warehouse Automation and Optimization: Motivating Advances in Large Scale Integer Programming

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.



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SPEAKER BIO – Amelia Regan is a Professor of Computer Science and Transportation Systems Engineering at the University of California, Irvine. Her current research interests include warehouse automation, optimal contracting for freight transportation, logistics systems, technologies enabling automated driving, dynamic and stochastic network optimization, ad-matching in mobile and stationary online applications, pedestrian and cyclist safety and mitigation of environmental impacts of transportation systems. Her research has been supported various sources including the National Science Foundation, the Transportation Research Board and JB Hunt Inc., and has been published in more than 160 refereed journal articles and conference proceedings papers. Representative journals include IEEE Transactions on Intelligent Transportation Systems, Transportation Research (A, B, C and E), Transportation Science and Operations Research. Her PhD students have taken faculty jobs in Civil Engineering, Logistics, Industrial and Systems Engineering, Management, Marketing and Computer Science in the US, Canada, Hong Kong, Korea, Taiwan and China as well as industry jobs in computing, logistics and transportation management.

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3:30 PM – 4:50 PM

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