Presented By:

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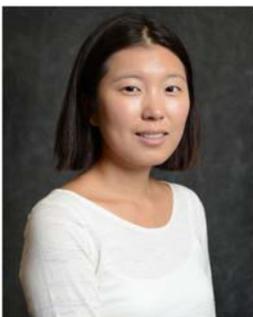
Transportation Seminar

Tuesday, April 17th, 2018
Calit2 Auditorium 2:00 pm– 3:30 pm
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Service Design and Operations of Autonomous Car-Sharing Systems (ACSS)

Recent advances in autonomous vehicles (AVs) will soon transform car-sharing system paradigm. It is expected Autonomous Car-Sharing Systems (ACSS) will serve more trips than current peer-to-peer ridesharing or taxi systems. However, fully relying on ACSS may not always be beneficial for both the service operators and the overall transportation systems due to fleet cost and relocation requirements. This talk will present a time-space optimization model for service design and operations of future ACSSs that determines the optimal fleet size, service level, and vehicle operations. The proposed model explicitly considers empty vehicle relocation and the demand shift between ACCS and privately owned AVs. We develop methodologies based on Benders decomposition to handle the computational challenges.

Dr. Jee Eun (Jamie) Kang is an Assistant Professor with the Department of Industrial and Systems Engineering at University at Buffalo, New York. She received her Ph.D. degree in Transportation Systems Engineering from University of California Irvine in 2013. Her research interests include applied operations research and transportation systems modeling. Her current research focuses on adoption of autonomous vehicles, and big data analytics for transit operations in addition to continuing works in adoption of alternative fuel vehicles, and disaster operations management. Her research activities are supported by the National Science Foundation, Region 2 Transportation Research Center, TransInfo University Transportation Centers, and Korea Transport Institute. She was a recipient of Women's Transportation Seminar graduate scholarship in 2012, and was selected as an Eno Fellow in 2013.

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