GEORGE MASON UNIVERSITY | **SEMINAR SERIES**
Department of Systems Engineering and Operations Research

Contextual Chance-Constrained Programming

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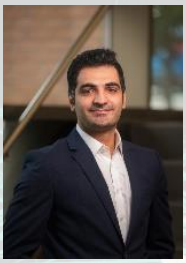

Friday, April 9, 11:00 AM – 12:00PM

Zoom Link | **ID:** 993 5500 4960 | **Pass:** 843462

Synopsis. Uncertainty in classical stochastic programming models is often described solely by independent random parameters, ignoring their dependence on multidimensional features. We describe a novel contextual chance-constrained programming formulation that incorporates features, and we argue that solutions that do not take them into account may not be implementable. Our formulation cannot be solved exactly in most cases, and we propose a tractable and fully data-driven approximate model that relies on weighted sums of random variables. Borrowing results from quenched large deviation theory we show the exponential convergence of our scheme as the number of data points increases. We illustrate our findings with an example from a soccer hiring problem based on the players' transfer market in the UK using real data.

Bio. Hamed Rahimian is an Assistant Professor in the Department of Industrial Engineering at Clemson University. Before joining Clemson IE, he was a Postdoctoral Research Fellow in the Department of Industrial Engineering and Management Sciences at Northwestern University, and obtained his Ph.D. in Operations Research from The Ohio State University. Hamed is broadly interested in data-driven decision-making under uncertainty, by combining ideas from optimization and statistical learning theory, to develop new theory, tools, and algorithms with applications in scarce resources allocation in complex, uncertain environments and under incomplete information. Hamed's work focuses on problems in engineering (e.g., water and energy) and operations (e.g., healthcare and inventory). His research has been recognized by a Runner-Up prize in 2017 INFORMS Computing Society Student Paper Award and a 2nd Place prize in 2019 IISE Pristker Doctoral Dissertation Award.