ISE-INFORMS Research Seminar

Data Analytics for IBM's IT Service Deals' Solutioning: Methodologies and Practical Implications + Analytics and OR Applications in Cloud Computing, IoT, & Blockchain Technologies

SPEAKER

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SESSION INFORMATION

DATE: MONDAY, April 24

TIME (Talk + Q&A Session): 10:00-11:30 AM

LOCATION: Lavery Hall 345

Abstract: IBM competes in a tender-like process to win highly valued IT service contracts as part of its $20B outsourcing business. Focusing on deals that are $10M and above, the typical negotiation lifecycle is anywhere between 3 to 12 months. Each deal contains IT services like cloud computing, service desk, and databases. The average number of total components/services in such opportunities is 10k. Given this complexity and high value, pricing these deals is a challenging problem. In the first two-thirds of this talk, we present the data analytical approaches that we successfully developed for the business, leading to "revenue increases in the range of millions of dollars each quarter and enabling the pricing of solutions in a tiny fraction of the time that this task used to take us, and in a more accurate and efficient manner", as quoted by our business VP of global solutions. The approach relies on data mining of historical and market data to produce some pricing points that are then fed into a predictive analytics model that outputs the chances of winning a deal at different pricing points. Lastly, we also briefly discuss other data analytics problems in the same framework of IT service deals, such as deal progress monitoring and revenue prediction.

In the last third of this presentation, we will go over multiple interesting problems in Cloud Computing, Internet of Things (IoT), and Blockchain technologies that use operations research and analytics to solve them. We will show some of our developments in these areas and illustrate potential research collaborations as well.

Biography: Dr. Aly Megahed is a research staff member at IBM's Almaden Research Center in San Jose, CA. In his current job, he develops and advances research in analytics, statistics, machine learning, and operations research to address different service science, cloud computing, Internet of Things (IoT), and blockchain technology problems. Dr. Megahed got his Ph.D. in Industrial Engineering from Georgia Tech with a focus on the development of operations research and analytics tools for solving problems in supply chains and logistics systems. He has two master's degrees in Industrial and Production Engineering from Georgia Tech and Alexandria University, respectively, and a B.S. in Production Engineering from Alexandria University. He has done multiple analytical research/consultancy projects for over 6 companies in the past, has given both invited and submitted talks at several conferences, companies, and institutions/universities, and has his work published in several academic journals and conferences in addition to filing 25 patent disclosures. He has taught university level courses at 7 different academic institutions. Dr. Megahed has also won several internal IBM awards and external ones, including being a finalist for the INFORMS Innovative Applications in Analytics Award. Being an active INFORMS member for the past few years, he organized and gave talks at multiple sessions in the analytics and service science sections, participated as a panelist in industrial job search panels, served as an organizer for Ph.D. colloquia, reviewed multiple papers for different journals, judged best student paper awards, and mentored several students.

Faculty and Students are invited