

**2018 Annual ISOM Research Workshop**  
**February 23-24, 2018**  
**University Hilton – Gainesville, Florida**

**Workshop Schedule**

**Thursday – February 22, 2018**

<i>7:00 pm – 9:00 pm</i>	<i>DINNER – The Warehouse Restaurant and Lounge</i>	<i>Address: 502 S Main Street  Gainesville, FL 32601</i>  <i>(Transportation from Hilton to the restaurant is provided by the ISOM faculty)</i>
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**Friday – February 23, 2018**

<u>Time</u>	<u>Title</u>	<u>Presenter</u>
<i>7:30 am – 8:15 am</i>	<i>BREAKFAST</i>	
8:15 am – 8:30 am	Welcome & Introductions	Subhajyoti Bandyopadhyay, Hsing K. Cheng
8:30 am – 9:15 am	Discovering Detecting Anomalous Patterns of Care using Health Insurance Claims	Sriram Somanchi
9:15 am – 10:00 am	Large-Scale Cross-Category Analysis of Consumer Review Content on Sales Conversion Leveraging Deep Learning	Xiao Liu
<i>10:00 am – 10: 30 am</i>	<i>BREAK</i>	
10:30 am – 11:15 am	Explaining and Predicting Customer Complaint Behavior on Twitter: A Tale of Two Machine Learning Models	Yuheng Hu
11:15 am – 12 noon	Nudging Consumer Behavior: Recommender Systems with Capacity Constraints	Karthik Kannan
<i>12 noon – 1:30 pm</i>	<i>LUNCH</i>	
1:30 pm – 2:15 pm	Recent Advances in in Deep Learning	Ruslan Salakhutdinov

2:15 pm – 3:00 pm	Direct Versus Indirect Peer Influence in Large Social Networks	Bin Zhang
<i>3:00 pm – 3:15 pm</i>	<i>BREAK</i>	
3:15 pm – 4:00 pm	A Deep Learning Architecture for Psychometric Natural Language Processing	Jingjing Li
4:00 pm – 4:45 pm	Leveraging Deep-learning Algorithms and Field Experiment Response Heterogeneity to Enhance Customer Targeting Effectiveness	Kunpeng Zhang
<i>6:30pm – 9:00 pm</i>	<i>DINNER – Paramount Grill</i>	<i>Address: 12 SW 1<sup>st</sup> Ave, Gainesville, FL 32601</i> <i>(Transportation from Hilton to the restaurant is provided by the faculty. Please be at the Hilton Lobby by 6.00 pm.)</i>

**Saturday – February 24, 2018**

<u>Time</u>	<u>Title</u>	<u>Presenter</u>
<i>8:00 am – 8:30 am</i>	<i>BREAKFAST</i>	
8:30 am – 9:15 am	Matching while Learning	Vijay Kamble
9:15 am – 10:00 am	Educational Recommendations	Konstantin Bauman
<i>10:00 am – 10:30 am</i>	<i>BREAK</i>	
10:30 am – 11:15 am	How Much is an Image Worth? Airbnb Property Demand Estimation Leveraging Large Scale Image Analytics	Param Vir Singh
11:15 am – 12:00 pm	Who Is A Good Decision Maker? Data-Driven Decision Ranking under Unobservable Quality	Maytal Saar-Tsechansky
12:00 – 12:15 pm	Concluding Remarks	Haldun Aytug
<i>12:15 pm</i>	<i>BOX LUNCH</i>	

**2018 Annual ISOM Research Workshop**  
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**Presentation Abstracts**

***Discovering Detecting Anomalous Patterns of Care using Health Insurance Claims***  
***Sriram Somanchi, University of Notre Dame***

Patient care data, such as Electronic Health Records (EHR) and health insurance claims, create a unique opportunity to improve clinical practice by analyzing patterns across patients and providing actionable insights. This work provides a methodology to identify subpopulations for whom certain patterns of medical care have led to significantly anomalous health outcomes. We provide a general framework to identify these anomalous patterns of care and provide an empirical analysis using health insurance data. We detect interventions in patient care (currently in terms of medications) that have significantly affected health outcomes either negatively (in which case they may represent suboptimal care that should be identified and corrected) or positively (in which case they may represent new, previously undiscovered best care practices). We hope that this work will eventually lead to better patient outcomes as measured by various factors such as the number of future hospital visits, length of stay in the hospital, fewer complications due to additional secondary diseases, etc. This will further help both in terms of improving patient health and reducing health care costs. The methodological contributions of this work are in developing novel machine learning methods to identify effective treatments for specific subpopulations from observational data. This is an important and challenging problem which is more generally applicable to the social science literature.

***Large-Scale Cross-Category Analysis of Consumer Review Content on Sales Conversion***  
***Leveraging Deep Learning***  
***Xiao Liu, New York University***

Consumers often rely on product reviews to make purchase decisions, but how consumers use review content in their decision making has remained a black box. In the past, extracting information from product reviews has been a labor intensive process that has restricted studies on this topic to single product categories or those limited to summary statistics such as volume, valence, and ratings. This paper uses deep learning natural language processing techniques to overcome the limitations of manual information extraction and shed light into the black box of how consumers use review content. With the help of a comprehensive dataset that tracks individual-level review reading, search, as well as purchase behaviors on an e-commerce portal, we extract six quality and price content dimensions from over 500,000 reviews, covering nearly 600 product categories. The scale, scope, and precision of such a study would have been impractical using human coders or classical machine learning models. We achieve two objectives. First, we describe consumers' review content reading behaviors. We find that although consumers do not read review content all the time, they do rely on review content for products that are expensive or of uncertain quality. Second, we quantify the causal impact of content information of read reviews on sales. We use a regression discontinuity in time design and leverage the variation in the review content seen by consumers due to newly added reviews. To extract content

information, we develop two deep learning models: a full deep learning model that predicts conversion directly and a partial deep learning model that identifies content dimensions. Across both models, we find that aesthetics and price content in the reviews significantly affect conversion across almost all product categories. Review content information has a higher impact on sales when the average rating is higher and the variance of ratings is lower. Consumers depend more on review content when the market is more competitive, immature, or when brand information is not easily accessible. A counterfactual simulation suggests that re-ordering reviews based on content can have the same effect as a 1.6% price cut for boosting conversion.

Note: Joint work with Dokyun Lee and Kannan Srinivasan.

### ***Explaining and Predicting Customer Complaint Behavior on Twitter: A Tale of Two Machine Learning Models***

***Yuheng Hu, University of Illinois at Chicago***

Customers are increasingly turning to social media for help. According to a recent report by Twitter, over 5.5M customer service-related tweets are generated per month. In this work, we aim to explore two questions: 1) understanding and explaining firms' strategy when engaging complaining customers on Twitter, and 2) predicting customer complaint behavior on Twitter. Specifically, for the first question, we consider how firms' customer engagement strategy is influenced by their expectations for how their customer-service interactions will lead to sentiment broadcast about the firm. We particularly focus on how politeness, a linguistic factor indicating how a customer is questioning or complaining rather than the content of a query, affects firms' customer service engagement strategy. We develop a novel machine-learning methodology to measure politeness from tweets. Using this approach, our estimation results show several interesting results, including that firms are more likely to respond to more polite customers, and that this effect is augmented for customers with high social status. However, firms are more likely to engage impolite customers with a high social status in a private channel such as through direct messaging. This behavior is justified by evidence that customer politeness predicts the nature of sentiment customers broadcast about the firm. On the other hand, for the second question, we focus on how to predict whether a customer will become a complainer, defined as those who have experienced unsatisfactory and decided to take public negative actions towards the firm. We propose a novel machine learning framework based on Non-negative Matrix Factorization (NMF) techniques for this task. To regularize the model learning process, several prior knowledge on the antecedents of customer complaint behavior are incorporated, which includes customer personality and firm's characteristics. We implement our approach using Alternating Least Squares (ALS) framework and show that our approach significantly outperforms state-of-the-art techniques in predicting which firm the customer is going to engage on Twitter and whether the customer is a complainer.

***Nudging Consumer Behavior: Recommender Systems with Capacity Constraints***  
***Karthik Kannan, Purdue University***

We seek to develop a recommender system that takes into account supply chain constraints regarding the availability of a product while nudging the customers to purchase it. The motivation to study this problem was because a firm faced availability constraints for one of its products but the available quantities still exceeded the current demand. To identify customers to nudge, we develop a Support Vector Machine (SVM) approach to rank order the customers based on their propensity to purchase the product. The underlying notion in our approach is that Type I errors, to be defined in the paper, in our classifier are not necessarily problematic but are potential nudging targets. Also, as a consequence, traditional ways of evaluating classifiers (with Type I and Type II errors) are not appropriate. Therefore, we conduct a field experiment to evaluate how well the identified customers are nudged through information and/or couponing. We find that, in terms of the successful nudges, our SVM-based approach performed better than other approaches. The experiment also generated insights about when couponing as opposed to information is more effective when nudging.

***Recent Advances in in Deep Learning***  
***Ruslan Salakhutdinov, Carnegie Mellon University***

In this talk I will first introduce a broad class of deep learning models and show that they can learn useful hierarchical representations from large volumes of high-dimensional data with applications in information retrieval, object recognition, and speech perception. I will next introduce models that can find semantically meaningful representations of words, learn to read documents and answer questions about their content. I will further introduce the notion of "Memory" as being a crucial part of an intelligent agent's ability to plan and reason in partially observable environments and demonstrate a deep reinforcement learning agent that can learn to store arbitrary information about the environment over long time lags. I will show that on several tasks these models significantly improve upon many of the existing techniques.

***Direct Versus Indirect Peer Influence in Large Social Networks***  
***Bin Zhang, University of Arizona***

With the availability of large-scale network data, peer influence in social networks can be more rigorously examined and understood than before. Peer influence can arise from immediate neighbors in the network (formally defined as cohesion or direct ties with one-hop neighbors) and from indirect peers who share common neighbors (formally defined as structural equivalence or indirect ties with two-hop neighbors). While the literature examined the role of each peer influence (direct or indirect) separately, the study of both peer network effects acting simultaneously was ignored, largely due to methodological constraints. This paper attempts to fill this gap by evaluating the simultaneous effect of both direct and indirect peer influences in technology adoption in the context of Caller Ring Back Tone (CRBT) in a cellular telephone network, using data from 200 million calls by 1.4 million users. Given that such a large-scale network makes

traditional social network analysis intractable, we extract many densely-connected and self-contained subpopulations from the network. We find a regularity in these subpopulations in that they consist either of about 200 nodes or about 500 nodes. Using these sub-populations and panel data, we analyze direct and indirect peer influences using a novel auto-probit model with multiple network terms (direct and indirect peer influence, with homophily as a control variable). Our identification strategy relies on Bramoullé et al.'s (2009) spatial autoregressive model, allowing us to identify the direct and indirect peer influences on each of the extracted subpopulations. We use meta-analysis to summarize the estimated parameters from all subpopulations. The results show CRBT adoption to be simultaneously determined by both direct and indirect peer influence (while controlling for homophily and centrality). Robustness checks show model fit to improve when both peer influences are included. The size and direction of the two peer influences, however, differ by group size. Interestingly, indirect peer influence (structural equivalence) plays a negative role in diffusion when group size is about 200, but a positive role when group size is about 500. The role of direct peer influence (cohesion), on the other hand, is always positive, irrespective of group size. Our findings imply that businesses must design different target strategies for large versus small groups: for large groups, businesses should focus on consumers with both multiple one-hop and two-hop neighbors; for small groups, businesses should only focus on consumers with multiple one-hop neighbors.

***A Deep Learning Architecture for Psychometric Natural Language Processing***  
***Jingjing Li, University of Virginia***

Psychometric measures, including health numeracy, subjective literacy, and perceptions of trust and anxiety related to physicians, have been shown to have a profound impact on the treatment outcomes for various health conditions, including depression, diabetes, PTSD, and cardiovascular disease. In many cases, these effects have been even more pronounced amongst health-disparate populations. However, effectively collecting and measuring such covariates in a timely and unobtrusive manner has proven elusive in real-world settings. In this study, leveraging survey text and users' text communication through online forums and text messaging-based channels, we propose a novel deep learning architecture to infer numeracy, literacy, trust, and anxiety in an unobtrusive, privacy-preserving manner. Our architecture incorporates novel embeddings for linguistic representational richness, key demographic dimensions (e.g., race, education, and income levels), and structural psychometric similarities. Preliminary results across thousands of subjects in comparison with existing state-of-the-art methods demonstrate the potential efficacy and utility of the proposed method. Our results have important downstream implications for mobile health platforms and community-engagement-based interventions designed to drive positive outcomes, particularly for health-disparate populations.

***Leveraging Deep-learning Algorithms and Field Experiment Response Heterogeneity to Enhance Customer Targeting Effectiveness***  
***Kunpeng Zhang, University of Maryland***

Firms seek to better understand heterogeneity in the customer response to marketing campaigns, which can boost customer targeting effectiveness. Motivated by the success of modern machine learning techniques, this paper presents a framework that leverages deep-learning algorithms and field experiment response heterogeneity to enhance customer targeting effectiveness. We recommend firms run a pilot randomized experiment and use the data to train various deep-learning models. By incorporating recurrent neural nets and deep perceptron nets, our optimal deep-learning model can capture both temporal and network effects in the purchase history, after addressing the common issues in most predictive models such as imbalanced training, data sparsity, temporality, and scalability. We then apply the learned optimal model to identify customer targets from the large amount of remaining customers with the highest predicted purchase probabilities. Our application with a large department store on a total of 2.8 million customers supports that optimal deep-learning models can identify higher-value customer targets and lead to better sales performance of marketing campaigns, compared to industry common practices of targeting by past purchase frequency or spending amount. We demonstrate that companies may achieve sub-optimal customer targeting not because they offer inferior campaign incentives, but because they leverage worse targeting rules and select low-value customer targets. The results inform managers that beyond gauging the causal impact of marketing interventions, data from field experiments can also be leveraged to identify high-value customer targets. Overall, deep-learning algorithms can be integrated with field experiment response heterogeneity to improve the effectiveness of targeted campaigns.

***Matching while Learning***  
***Vijay Kamble, University of Illinois at Chicago***

We consider the problem faced by a service platform that needs to match supply with demand, but also to learn attributes of new arrivals in order to match them better in the future. We introduce a benchmark model with heterogeneous workers and jobs that arrive over time. Job types are known to the platform, but worker types are unknown and must be learned by observing match outcomes. Workers depart after performing a certain number of jobs. The payoff from a match depends on the pair of types and the goal is to maximize the steady-state rate of accumulation of payoff. Our main contribution is a complete characterization of the structure of the optimal policy in the limit that each worker performs many jobs.

The platform faces a trade-off for each worker between myopically maximizing payoffs (exploitation) and learning the type of the worker (exploration). This creates a multitude of multi-armed bandit problems, one for each worker, coupled together by the constraint on availability of jobs of different types (capacity constraints). We find that the platform should estimate a shadow price for each job type, and use the payoffs adjusted by these prices, first, to determine its learning goals and then, for each worker, (i) to balance learning with payoffs during the "exploration phase", and (ii) to myopically match after it has achieved its learning goals during the "exploitation phase."

***Educational Recommendations***  
***Konstantin Bauman, Temple University***

In this project, we study the problem of providing recommendations to the students that help them in their studies. To address this problem, we present an approach of providing recommendations of remedial learning materials to the students that fills the gaps in their knowledge of the subject in the courses that they take. According to this method, we first identify gaps in student's mastery of various course topics. Then we identify those items from the library of assembled learning materials that help us to fill those gaps, and then we recommend these identified materials to the student. We show empirically through A/B testing that this approach leads to better performance results, as measured by student's total score on the final exam across the Personalized, Non-personalized and the Control groups and by improvement of student's average score on that exam in comparison to the previously taken courses. The proposed method is scalable since it can be applied to a large number of students across many courses.

***How Much is an Image Worth? Airbnb Property Demand Estimation Leveraging Large Scale Image Analytics***  
***Param Vir Singh, Carnegie Mellon University***

We investigate the economic impact of images and lower-level image factors that influence property demand in Airbnb. Using Difference-in-Difference analyses on a nine-month Airbnb panel dataset spanning 8,211 properties, we find that units with verified photos (taken by Airbnb photographers) generate approximately 7% more demand, or \$4,141 per year on average. Leveraging computer vision techniques to classify the image quality of more than 380,000 photos, we show that 52.5% of this effect comes from the high image quality of verified photos. Next, we identify 12 image attributes from photography and marketing literature to further quantify (using computer algorithms) and characterize unit images to evaluate the economic impact of these human-interpretable attributes. The results suggest that these attributes have a direct impact on demand even after controlling for many observables and thus there is significant value in optimizing images in e-commerce settings. From an academic standpoint, we provide one of the first large-scale empirical evidence that directly connects systematic lower-level and interpretable image attributes to demand. This contributes to, and bridges, the photography and marketing (e.g., staging) literature, which has traditionally ignored the demand side (photography) or did not implement systematic characterization of images (marketing). Lastly, these results provide immediate insights for housing and lodging e-commerce managers (of Airbnb, hotels, realtors, etc.) to optimize product images for increased demand.

***Who Is A Good Decision Maker? Data-Driven Decision Ranking under Unobservable Quality***  
***Maytal Saar-Tsechansky, University of Texas at Austin***

The capacity to evaluate and rank expert workers by their decision quality has substantial practical value. Yet, when no ground truth information exists, such evaluation typically requires enlisting peer-experts and may be prohibitively costly in many important settings. In this work, we

formulate a data science problem of Ranking Expert decision makers' unobserved Quality (REQ) based exclusively on historical decisions data and without resorting to evaluation by other experts. The REQ problem is particularly challenging because the correct decisions in our settings are unknown (unavailable), and because some of the information used by the decision makers may not be available for retrospective evaluation. We propose a machine-learning-based approach for the REQ problem and evaluate it on several datasets. We evaluate our approach under a variety of settings and data domains, and we find that it yields robust performance: our REQ method often yields superior ranking of expert workers and is otherwise comparable to the best alternative approach. As such, our method constitutes a de-facto benchmark for future research on the REQ problem. In addition, we explore analytically and empirically the conditions under which our approach is particularly advantageous in practice. Finally, we discuss and develop an approach for a related challenge of ranking decision-making entities, such as business units or service providers that are unable (or unwilling) to share their decision data. For this variant of the REQ problem as well our proposed approach yields effective ranking.



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**Participant Bio-Sketches**

**Konstantin Bauman**

*Temple University, [kbauman@temple.edu](mailto:kbauman@temple.edu)*

Konstantin Bauman is an Assistant Professor at the Management Information Systems Department of the Fox School of Business, Temple University.

Konstantin's research interests lie in the area of technical information systems (design science). Within technical IS, he is focusing on the fields of quantitative modeling and data science. In particular, Konstantin works on developing novel machine learning methods for predicting customer preferences, and designing novel approaches to recommender systems that provide better personalized advice to the customers.

Before joining Fox School of Business, Konstantin Bauman worked as a postdoctoral research scientist in the IOMS Department at the Leonard N. Stern School of Business, NYU. Konstantin also worked in industry as a head of machine learning group at the research department of Yandex LLC. where he dealt with large-scale machine learning and data science problems on a daily basis. Konstantin received his M.S. in Mathematics from Moscow State University in 2008, his M.S. in Data Mining from Moscow Institute of Physics and Technology in 2009, and his Ph.D. in Geometry and Topology from the Mathematical Department of Moscow State University in 2012.

**Yuheng Hu**

*University of Illinois at Chicago, [yuhenghu@uic.edu](mailto:yuhenghu@uic.edu)*

Yuheng Hu is an Assistant Professor in the Department of Information and Decision Sciences at University of Illinois at Chicago. Before UIC, he was a Research Staff Member at IBM Research. Yuheng obtained his Ph.D in Computer Science from Arizona State University. His research interest is at the intersection of Machine Learning, Social Media Analytics, and Online Markets. His research has been published in premier journals such as IEEE Transactions on Knowledge and Data Engineering, and top conferences such as ACM CHI, IJCAI, and AAAI. His work has won multiple honors, including Best Paper Nominations at INFORMS CIST, the ACM CHI conference, INFORMS eBusiness Best Paper Award, and a letter of commendation from The President of Arizona State University. His research has also been widely covered by national and international media outlets such as ABC, PBS, WIRED magazine, and The Sydney Morning Herald.

**Vijay Kamble**

*University of Illinois at Chicago, [kamble@uic.edu](mailto:kamble@uic.edu)*

Vijay Kamble is an Assistant Professor of Information and Decision Sciences in the College of Business Administration at University of Illinois at Chicago. From 2015-2017 he was a postdoctoral researcher in the Society and Algorithms Lab in the Management Science and

Engineering Department at Stanford University. He obtained his PhD in Electrical Engineering and Computer Science from UC Berkeley in 2015. His research interests are in modeling and algorithm design surrounding the the themes of pricing, learning, and incentives in online labor markets and service platforms.

**Karthik Kannan**

*Purdue University, [kkarthik@purdue.edu](mailto:kkarthik@purdue.edu)*

Karthik Kannan is the Thomas Howatt Chaired Professor in Management at Purdue's Krannert School of Management. He is the academic director for the MBA programs (two-year MBA, STEM-MBA, Weekend MBA), academic co-director for MS in BAIM (Business Analytics and Information Management), and co-director for BIAC (Business Information and Analytics Center).

He researches and teaches aspects related to "Designing for Human Instincts." Specifically, he is interested in understanding and designing systems -- products, processes, or policies -- that exploit human instincts and biases in order to nudge behavior. He has published papers in several leading management journals and conferences, and has also won some best paper awards. He also serves/has served in editorial capacities. He is also a CERIAS Fellow and Krannert's Faculty Fellow. For 2017-18, he has been awarded the prestigious Jefferson Science Fellowship by the National Academies of Sciences and Engineering.

Prior to joining Purdue, he obtained his PhD in information systems, MS in Electrical and Computer Engineering, and MPhil in Public Policy and Management all from Carnegie Mellon University. Before joining the graduate school, he worked with Infosys Technologies for a couple of years. His undergraduate degree is in Electrical and Electronics Engineering from NIT Trichy (formerly, REC Trichy).

**Jingjing Li**

*University of Virginia, [jl9rf@comm.virginia.edu](mailto:jl9rf@comm.virginia.edu)*

Jingjing Li is an assistant professor of information technology in the McIntire School of Commerce at the University of Virginia. She received her Ph.D. from the Leeds School of Business, the University of Colorado at Boulder. Her research interests relate to machine learning and big data analytics, with applications in e-commerce, platform business, healthcare, search engine, user-generated contents, and recommender systems. She is currently working on multiple machine learning projects funded through the National Science Foundation. Her work on Big Data has received the AWS Research Grant and Microsoft Research Azure Award. Before joining the McIntire School, she was a Scientist at Microsoft, where she proposed and implemented several large-scale machine learning solutions for numerous Microsoft products such as Xbox One, Windows 8 Search Charm, Windows Phone App Store, Cortana, and Bing Entity Search.

**Xiao Liu**

*New York University, [xliu@stern.nyu.edu](mailto:xliu@stern.nyu.edu)*

Xiao Liu is an Assistant Professor of Marketing at New York University Stern School of Business. Professor Liu's research focuses on quantitative marketing and empirical industrial organization, with a particular interest in consumer financial service innovations, high-tech marketing and machine learning. She received her B.S. in Finance from Tsinghua University and her Ph.D. in Marketing from Carnegie Mellon University Tepper School of Business.

**Maytal Saar-Tsechansky**

*University of Texas at Austin, [maytal.saar-tsechansky@mcombs.utexas.edu](mailto:maytal.saar-tsechansky@mcombs.utexas.edu)*

Maytal Saar-Tsechansky is an Associate Professor of Information, Risk and Operations Management at the McCombs School of Business, The University of Texas at Austin, and a co-founder of Sweetch -- a mobile health startup firm. She received her Ph.D. from New York University's Stern School of Business. Her research interests include machine learning and Artificial Intelligence methods for data-driven decision-making. Her research has been published in the Journal of Finance, Management Science, Information Systems Research, Journal of Machine Learning Research, and Machine Learning Journal, among other venues. Maytal's research has been supported by both government and industry, including the National Science Foundation, SAP, and the Israeli Science Ministry. In recent years she has served on the editorial boards of the Machine Learning Journal, the Information Systems Research (ISR) journal, the INFORMS Journal on Computing, and she is a frequent Program Committee member in the premier machine learning, data mining, artificial intelligence, and Information Systems conferences. At McCombs, Maytal has developed and taught popular machine learning and data mining courses tailored for business students.

**Ruslan Salakhutdinov**

*Carnegie Mellon University, [rsalakhu@cs.cmu.edu](mailto:rsalakhu@cs.cmu.edu)*

Ruslan Salakhutdinov received his PhD in machine learning (computer science) from the University of Toronto in 2009. After spending two post-doctoral years at the Massachusetts Institute of Technology Artificial Intelligence Lab, he joined the University of Toronto as an Assistant Professor in the Department of Computer Science and Department of Statistics. In February of 2016, he joined the Machine Learning Department at Carnegie Mellon University as an Associate Professor.

Ruslan's primary interests lie in deep learning, machine learning, and large-scale optimization. His main research goal is to understand the computational and statistical principles required for discovering structure in large amounts of data. He is an action editor of the Journal of Machine Learning Research and served on the senior programme committee of several learning conferences including NIPS and ICML. He is an Alfred P. Sloan Research Fellow, Microsoft Research Faculty Fellow, Canada Research Chair in Statistical Machine Learning, a recipient of the Early Researcher Award, Connaught New Researcher Award, Google Faculty Award, Nvidia's Pioneers of AI award, and is a Senior Fellow of the Canadian Institute for Advanced Research.

**Param Vir Singh**

*Carnegie Mellon University, [psidhu@andrew.cmu.edu](mailto:psidhu@andrew.cmu.edu)*

Dr. Param Vir Singh is the Carnegie Bosch Associate Professor of Business Technologies and Director of PNC Center for Financial Services Innovation at the Tepper School of Business, Carnegie Mellon University. He is the recipient of the Informs' Information Systems Society's prestigious Sandy Slaughter Early Career award.

Dr. Singh's research includes economic aware analysis of user generated content and structural modeling of user behavior in new economy. His interests are focused on digital economy, in particular, sharing economy, crowdsourcing, social media, enterprise 2.0, fintech and mobile. Much of his work follows the econo-mining principle where he applies machine learning, deep learning, computer vision, natural language processing techniques along with rich economic theories to analyze policy/design questions.

His research has won several best paper awards and his research is frequently cited by mainstream media such as Forbes, InformationWeek, CIO magazine, and Business Week. He has been frequently invited by professional/academic societies such as Informs/CIST to provide tutorials on topics including deep learning and structural modeling. Dr. Singh is Associate editor at Management Science and a Senior editor at Information Systems Research. His research articles have appeared in several journals including Management Science, Marketing Science, Information Systems Research, Management Information Systems Quarterly, Organization Science and ACM Transaction of Software Engineering and Methodologies.

**Sriram Somanchi**

*University of Notre Dame, [somanchi.1@nd.edu](mailto:somanchi.1@nd.edu)*

Sriram Somanchi is an Assistant Professor of Business Analytics at Mendoza College of Business. His research focuses on bridging the gap between machine learning and social science problems. His interests include developing computationally efficient statistical machine learning algorithms for pattern detection in massive, complex data and demonstrating the practical utility of applying these approaches to real-world problems. He has worked in the area of event and pattern detection in the domains of disease surveillance, clinical health, finance and law enforcement. Somanchi also is interested in leading the development of machine learning and data-mining methods to enable data-driven decision making in organizations and public policy agencies. Somanchi has a PhD in Information Systems and Management from Heinz College at Carnegie Mellon University. He is a graduate from Machine Learning Department at CMU, and earned an M.E in computer science from the Indian Institute of Science, Bangalore, India.

**Bin Zhang**

*University of Arizona, [binzhang@arizona.edu](mailto:binzhang@arizona.edu)*

Bin Zhang is an assistant professor in the Department of Management Information Systems, University of Arizona, and a visiting research fellow at Carnegie Mellon University. He is also an affiliated member of Artificial Intelligence Lab, University of Arizona. Bin received his Ph.D.

degree in Information Systems Management from Carnegie Mellon University, and a Master's degree in Machine Learning, from the School of Computer Science at CMU. His primary research interests are large social network analysis and statistical modeling for network problems. Bin's research projects have been funded by federal and national agencies such as NSF, NSFC, and NIH. His work has appeared in premier information systems journals such as Information Systems Research. Bin also has experience in the Internet industry at companies like Yahoo! and has designed architectures of online ERP systems in the software industry.

**Kunpeng Zhang**

*University of Maryland, [kzhang@rhsmith.umd.edu](mailto:kzhang@rhsmith.umd.edu)*

Kunpeng Zhang (KZ) is a researcher in the area of large-scale data analytics with particular focuses on mining social media data through machine learning, network analysis, and natural language processing techniques. He is currently Assistant Professor in department of Information Systems at the Smith School of Business, University of Maryland, College Park. He received his Ph.D. in Computer Science from Northwestern University. He published papers in the area of social media, text mining, network analysis, and information systems on top conference and journals. He serves as program committees for many international conferences and currently is Associate Editor for Electronic Commerce research journal. For more information, please see his website: <http://www.terpconnect.umd.edu/~kpzhang/>



## **Information Systems and Operations Management Core Faculty**

### **Haldun Aytug**

<http://warrington.ufl.edu/isom/faculty/facultyinfo.asp?WEBID=2102>

Haldun Aytug is the Karl. F. and Nancy J. Flammer Professor and Academic Unit Head of Information Systems and Operations Management at the University of Florida. His research interests include machine learning, electronic commerce and scheduling. He has received research funding from the National Science Foundation and has published his work in Management Science, Information Systems Research, ORSA Journal on Computing, and other academic journals. His teaching interests include business objects, data mining, and logistics. Haldun earned his PhD in Decision and Information Sciences from the University of Florida in 1993. He is a member of Institute for Operations Research and Management Science and Association for Computing Machinery. He serves on the editorial review boards of Decision Support Systems, Decision Sciences Journal and Journal of Database Management.

### **Seema Bandyopadhyay**

<http://warrington.ufl.edu/faculty/facultyinfo.asp?WEBID=2956>

Seema Bandyopadhyay is currently a Senior Lecturer in the department of Information Sciences and Operations Management at the University of Florida, Gainesville. Her research interests include the design, performance analysis, and optimization of computer networks. Her research has been published in journals including Journal of Management Information Systems, Journal of Operations Research Society, IEEE Transactions on Mobile Computing, IEEE/ACM Transactions on Networking and Computer Networks. Her teaching interests include computer networks and design and development of application and system software. She received the ISOM Teaching Excellence Award for the MS-ISOM Program in 2012 and was recognized as Outstanding Faculty by the College of Liberal Arts and Sciences at University of Florida in 2009. Before joining the ISOM department, she served as a lecturer in department of Computer Science and Information Science and Engineering at University of Florida and as a Visiting Assistant Professor in the School of Electrical Engineering and Computer Science, University of Central Florida, Orlando. She also worked as a research engineer in a telecom company (C-DOT) in India from 1991-1997. She received her Ph.D. degree from the School of Electrical and Computer Engineering, Purdue University, West Lafayette, in 2004. She received a Bachelor's degree in Computer Science and Engineering from the Indian Institute of Technology, Varanasi, India, in 1991 and a Master's degree in Computer Science and Engineering from the Indian Institute of Technology, Delhi, India, in 1997.

### **Subhajyoti Bandyopadhyay**

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Subhajyoti ("Shubho") Bandyopadhyay is the Ethridge Professor of Information Systems and Operations Management at the Warrington College of Business Administration at the University of Florida, Gainesville. Professor Bandyopadhyay's areas of research interests include Net

Neutrality, Information Systems Policy, Health informatics, Offshore Outsourcing of Services and the economics of Information Systems. His work has been cited by Google in its filing to the Federal Communications Commission in support for Net Neutrality. His research has been funded by the NET Institute, the Public Utility Research Center at the University of Florida, and by a Faculty Enhancement Opportunity award by the University of Florida. His research has been published in Information Systems Research, MIS Quarterly, Marketing Science, Journal of Management Information Systems, Journal of Operations Management and Communications of the ACM, among others. He received the Judy Fisher Teaching with Technology Award in 2008 and the Graduate Teaching Award in 2011-12 from the College of Business Administration at the University of Florida. Shubho received his Ph.D. in Management Information Systems from Purdue University in 2002. Prior to his academic career, he has had several years of industry experience with IBM in India. He is a member of the INFORMS and the AIS.

### **Harold Benson**

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Harold Benson, Professor Emeritus of Information Systems and Operations Management, earned his Ph.D. from Northwestern University in Industrial Engineering and Management Sciences in 1976. He is a member of Phi Beta Kappa. He has held the American Economic Institutions and the Knight-Ridder Chairs at the University of Florida. His research interests are in the areas of multiple criteria decision-making and global optimization. In 2004, he received the prestigious Georg Cantor Award from the International Society on Multiple Criteria Decision Making for his lifetime research contributions to multiple criteria decision making. He was a College of Business Outstanding Teacher of the Year in 1990-1991, and he received a Teaching Improvement Award from University in 1995-1996. In 2006-2007 he was named the Undergraduate Faculty Member of the Year in the ISOM department. He has authored over 75 refereed research publications. He has served as an Associate Editor for *Naval Research Logistics*, *the Journal of Mathematical Analysis and Applications*, and *Operations Research Letters*. Currently, he is Associate Editor of the *Journal of Optimization Theory and Applications* and the *Journal of Global Optimization*. He is also an Editorial Board Member for the *International Journal of Computational and Numerical Analysis and Applications*, the *International Journal for Rapid Publications in Mathematics*, the *International Journal of Information Systems for Logistics and Management* and the *International Journal of Productivity and Quality Management*.

### **Janice Carrillo**

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Janice E. Carrillo obtained her master's and doctorate degrees in Operations Management from the Georgia Institute of Technology. During her graduate studies, she received a prestigious fellowship from Intel and won the Best Student Paper Award at the Portland International Conference on Management of Engineering and Technology (PICMET). Her interests in technology management were fueled by her earlier work experience as an electrical engineer. Prior to her graduate studies, she worked at Clorox, Hughes Aircraft, Rockwell International, and McDonnell Douglas.

Currently, Professor Carrillo is an Associate Professor and the Pricewaterhouse Coopers Professor in the Warrington College of Business at the University of Florida, where she teaches operations and supply chain management. Her general research topics of interest include: management of technology, manufacturing strategy, supply chain management, and sustainability. In particular, her research addresses the analysis of process improvement, new product development, and sourcing strategies and has been accepted for publication in journals including Management Science, IIE Transactions, Production and Operations Management, and the European Journal of Operational Research. She is a senior editor for the Production and Operations Management Journal, and she serves on the Editorial Review Boards for both the Decision Sciences Journal and IEEE Transactions on Engineering Management. She is active in the Production and Operations Management Society (POMS), where she has served as the Vice President of Membership and a Board Member. In the past, she served as President for the Technology Management Section (TMS) at the Institute for Operations Research and Management Sciences (INFORMS).

### **Hsing Kenny Cheng**

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Dr. Hsing Kenneth Cheng is the John B. Higdon Eminent Scholar of Information Systems and Operations Management of Warrington College of Business at the University of Florida. Prior to joining UF, he served on the faculty at The College of William and Mary from 1992 to 1998. He received his Ph.D. in computers and information systems from William E. Simon Graduate School of Business Administration, University of Rochester in 1992. Professor Cheng teaches information technology strategy, object-oriented analysis and design, managerial statistics, electronic commerce, and supply chain management. He was awarded the Warrington College of Business Administration Teacher of the Year for 2000-2001, and “Outstanding Faculty” Award, for service and teaching excellence to Professional MBA Class of 2012, Warrington College of Business, University of Florida.

Dr. Cheng’s research interests involve electronic commerce, information systems policy issues, and information technology in supply chain management. His recent research focuses on modeling the impact of Internet technology on software development and marketing, and the national debate on net neutrality. He was ranked 20<sup>th</sup> (for the period of 2009-2011) and 16<sup>th</sup> (for the period of 2010-2012) among the world’s top-100 researchers in information systems based on publications on the top three information systems journals. His “Toward a Profile of Student Pirates” article is selected by *Journal of Business Ethics* as one of the 49 distinguished articles (out of 4747 published papers in thirty years) in JBE’s thirty year anniversary issue. His 2012 *Decision Sciences* paper “Net Neutrality, Broadband Market Coverage, and Innovation at the Edge” is featured in B-School Research Briefs of Bloomberg Businessweek. His 2015 *Decision Sciences* paper “Estimating Social Influences from Social Networking Sites” won the best paper award of having the most significant contribution published in the *Decision Sciences* journal of 2015. Dr. Cheng has co-edited several special issues in various information systems journals. He has served on the program committee of many information systems conferences and workshops, and is a program co-chair for the Workshop on E-Business (2003, 2012), and Taiwan Summer Workshop on Information Management (2013).

**Emre Demirezen**

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Emre M. Demirezen is an Assistant Professor in the Department of Information Systems and Operations Management at the Warrington College of Business Administration, University of Florida. He received his Ph.D. in Information and Operations Management from Mays Business School at Texas A&M University. He also holds M.S. and Bachelor's degrees in Industrial Engineering from Bogazici University in Turkey. His research interests include economics of health information technology, participation dynamics and benefits of health information exchanges, physiological modeling, value co-creation, open source software, digital supply chains, and recommender systems. His research has been published in journals such as *Information Systems Research*, and *Production and Operations Management*.

**H. Keith Florig**

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H. Keith Florig is Associate Research Scholar in the Department of Information Systems and Operations Management at the University of Florida. Dr. Florig's research addresses problems in risk management and risk communication in social-technological systems. His research has been published in *Science*, *Risk Analysis*, and *Journal of Risk Research*, among other outlets. Dr. Florig teaches graduate courses in statistics, risk management, and crisis management. Before coming to UF in 2010, Dr. Florig served on the faculty of the Department of Engineering and Public Policy at Carnegie Mellon University. He is currently an Adjunct Associate Professor there. Dr. Florig has served on committees of the National Academies of Science, the National Council on Radiation Protection, and the Society for Risk Analysis. He has twice testified before the U.S. Congress on risk management issues. Dr. Florig has extensive research and teaching experience in China. He has published in Chinese academic journals and taught graduate and executive courses in risk and crisis management at several Chinese universities.

**Ira Horowitz**

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Ira Horowitz is Graduate Research Professor Emeritus, having retired as a full-time faculty member at the end of the 1999-2000 academic year, which marked his 28th year of service to the University of Florida. Prior to coming to the University of Florida, Dr. Horowitz, who earned his B.A. at the Johns Hopkins University (1955) and Ph.D. at the Massachusetts Institute of Technology (1959), spent twelve years on the faculty of the School of Business Administration at Indiana University. He has also held visiting faculty appointments at the University of Kansas City (1960), The Catholic University of Louvain (1968-69), Michigan State University (1978-79), Institut Europeen d' Administration des Affaires (1984-85; Summer 1987; Summer 1997), The City University of Hong Kong (1992-94; 1997-98), Chiba University of Commerce (Summer 1993; November 1998), and The Chinese University of Hong Kong (Spring/Summer 1995). Since his retirement, he has periodically been taken out of mothballs to teach at the University of Florida, and has held semester-long overseas teaching appointments at Adelaide University (2001), the Consortium of International Universities (Italy, 2001), City University of Hong Kong (2002,

2007), Hong Kong Polytechnic University (2005), Hellenic American University (Athens, 2007), and Hong Kong Baptist University (2013-14). Since 2002 he has been a perennial (summer) Adjunct Faculty member in the College of Business at San Diego State University. He has been a Woodrow Wilson Fellow (1955-56), Beta Gamma Sigma Distinguished Scholar (1977-78), and American Institute of Decision Sciences Fellow (1978), and is the recipient of the American Institute of Decision Sciences Distinguished Service Award (1983), Teknologie Doktor h. c. Linköping Institute of Technology (1989), and the Blue Key Distinguished Faculty Award (1990).

Dr. Horowitz served as Editor of Decision Sciences (1978-83) and Managerial and Decision Economics (1988-93), and has also served on numerous Editorial Boards. At the present time he serves on the Editorial Boards of the Managerial and Decision Economics, the Journal of Sports Economics, and the International Journals of Strategic Decision Sciences and Integrated Supply Management.

Dr. Horowitz is the author/coauthor of five books and has published over 200 articles in refereed journals in economics and business. Since 2011 his papers have appeared in, among other journals, Decision Sciences Journal of Innovative Education, Group Decision and Negotiation, The Journal of Gambling Business and Economics, Australian Tax Forum, Applied Energy, IEEE Transactions on Power Systems, IEEE Transactions on Smart Grid, and Small Group Research. His recent and on-going research has focused on the pricing and procurement problems facing electric utilities.

### **Kyung Sung Jung**

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Kyung Sung Jung is a Lecturer in the Department of Information Systems and Operations Management at Warrington College of Business, University of Florida. He received his Ph.D. from Jindal School of Management, The University of Texas at Dallas on August 2013. He received MBA in Foster School of Business at University of Washington, Seattle. His current research interests include the healthcare operations in the operating room, online retailing and digital content in e-commerce, and the scheduling operations in robotic cells. He has published his research in Production and Operations Management, IIE Transactions, Service Science and Annals of Operations Research. His teaching interests are in Production and Operations Management, Telecommunications, Scheduling, and Quantitative Methods. Before entering academics, he had worked at LG Electronics, INC. as a Researcher in Mechanical Department at Mobile Handset R&D Center, Korea. Dr. Jung has two patents in the U.S and 19 local patents in Korea for mobile phone technologies.

### **Gary J. Koehler**

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Gary J. Koehler is the Emeritus Professor of Management Information Systems in the Department of Information Systems and Operations Management. He received his Ph. D. from Purdue University in 1974. He has held academic positions at Northwestern University and Purdue University and between 1979-1987 was a cofounder and CEO of a high-tech company which grew to over 260 employees during that period. His research interests are in the intersection of the

Operations Research, Artificial Intelligence and Information Systems areas and include such topics as genetic algorithm theory, machine learning, e-commerce, and decision support systems. He has published in journals including Management Science, Information Systems Research, Operations Research, Journal on Computing, Evolutionary Computation, Decision Sciences, Decision Support Systems, the European Journal on Operational Research, Computer Technologies and Information Systems: IIE Transactions on Operations Engineering, SIAM Journal on Control and Optimization, Discrete Applied Mathematics, and many more.

He was an area editor for Decision Support Systems and was on the editorial boards of several other journals. He has served as an expert witness for many large firms (including AT&T and Anderson Consulting), has been an External Examiner for several Universities, and has worked under grants from IBM and the National Science Foundation.

### **Anuj Kumar**

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Anuj Kumar is an Assistant Professor of Information Systems Management at Warrington College of Business Administration, University of Florida. Anuj holds a PhD in Information Systems Management from Heinz School of Information Systems and Management, Carnegie Mellon University. He also holds a Bachelor's degree in Mechanical Engineering and a Master's degree in Thermal Engineering from Indian Institute of Technology, India, and a Master's degree in management from Indian Institute of Management, India.

Professor Kumar is interested in finding business relevant insights at the intersection of Information Systems, Operation Management and Marketing. Specifically, he studies multichannel customer behavior in IS enabled new technology channels e.g. customer support at call centers and digital goods markets settings. He employs economic and behavioral theories to model customer behavior and then utilizes econometric and probabilistic methods to extract actionable insights from the field data. Professor Kumar has published his research in top tier journals like Management Science, Manufacturing & Service Operations Management, Information Systems Research, and Management Information Systems Quarterly.

### **Young Kwark**

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Young Kwark is an Assistant Professor in the Department of Information Systems and Operations Management at Warrington College of Business, University of Florida. She received her Ph.D. from Naveen Jindal School of Management, the University of Texas at Dallas on December 2013. She also received MBA in Michael G. Foster School of Business at University of Washington in Seattle. She had worked at LG CNS Co., Ltd. as a system designer and solution expert. Projects she had joined include business process management, service oriented architecture, knowledge management system, and enterprise portal. Her primary research interests are in the economics of emerging phenomena from the rise of new industries and technology changes. She is interested in the effects of user-generated content in online retailing and digital content in e-commerce, information security, and information systems project management. Her papers can be found in

Decision Analysis, Information Systems Research, Management Information Systems Quarterly, and Management Science.

**Jayashree Mahajan**

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Professor Mahajan is a Lecturer in the Department of Information Systems & Operations Management and currently teaches International Marketing in the Online and on-campus Executive MBA Programs and Advanced Managerial Statistics in the MBA/MSM Programs. She has a Ph.D. in Business from the University of Wisconsin-Madison, an MBA from the University of Windsor, and an MA in Economics from Bombay University. Professor Mahajan has been on the faculty in the Department of Marketing at the University of Florida and at the University of Arizona. While at UF, she taught Business Statistics at the undergraduate level in the electronic platform format for a number of years. At the graduate level, she has also taught Marketing Research, Marketing Decision Support Systems, and Environmental Scanning. Her research projects have examined the use of specialists and generalists in multi-product firms, examining the value of spillovers from investments in information technology for marketing activities, and examining the effects of feedback and expertise on overconfidence in marketing predictions. Her work has been published in a number of journals including *Journal of Marketing Research*, *International Journal of Research in Marketing*, *Decision Sciences Journal*, *European Journal of Operational Research*, and *Vikalpa (Journal of Decision Makers)*. Her research has been funded by the Marketing Science Institute and the National Science Foundation.

**Aditi Mukherjee**

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Dr. Aditi Mukherjee has a Masters in Software Engineering from PSG College of Technology, India and a Ph.D. in Management (Information Systems) from Purdue University. She has been a lecturer in the Information Systems and Operations Management Department at the Warrington College of Technology at the University of Florida since 2009 and has taught at the graduate and undergraduate level. Her research interests include knowledge management and pedagogical advancements in Information Systems courses.

**Adam Munson**

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Adam B. Munson is a Lecturer in the department of Information Systems and Operations Management at the University of Florida. He earned his Ph.D. in Environmental Engineering from the University of Florida and also holds B.S. and M.S. degrees in Mechanical Engineering and Aquatic Ecology, and an M.B.A. He also is licensed as a PE in industrial engineering. Adam has conducted extensive research on development of environmental constraints for the purpose of water supply planning and alternative water resource development. He is particularly interested in developing the lowest cost local and region-scale strategies for meeting current and future water supply demands without violating ecologic constraints on traditional water supplies. This

ultimately leads towards the conjunctive use of multiple surface and ground water resources, with highly variable availability, to maximize resource yield and supply reliability. Recently Adam has been involved with the statistical modeling of historic surface water stages based on climatic indicators where stage records are too brief to span climate cycles. This impacts recourse availability by establishing a non-bias record of historic condition. Adam's research has been published in multiple journals including the Journal of the American Water Resource Association, Florida Water Recourses Journal, and Lake and Reservoir Management.

### **Xiajun (Amy) Pan**

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Amy's research interests include supply chain management, retail operations management, and business analytics. Amy has conducted consulting projects for BNSF Railway Company and developed decision models and solution approaches, saving millions of dollars yearly for the company. She has published papers in top journals such as *Production and Operations Management* and *Manufacturing Service and Operations Management*. She won the *Wickham Skinner Award* for Best Paper Published in *Production and Operations Management* during 2012.

### **Praveen Pathak**

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Praveen Pathak is the Robert B. Carter Professor in the Department of Information Systems and Operations Management. He received his Ph.D. from University of Michigan at Ann Arbor in 2000. He holds a MBA from the Indian Institute of Management, Calcutta, , and a B.Tech. (Honors) from the Indian Institute of Technology. Prior to joining University of Florida, he was working as an Assistant Professor at Purdue University. His research interests are in the field of Information Retrieval, and Web Mining. Recently, he has also done research in the area of Business Process Outsourcing, and Healthcare IT. He has published in various journals including Management Science, Information Systems Research, Journal of Operations Management, Journal of Management Information Systems, Production and Operations Management, IEEE Transaction on Knowledge and Data Engineering, Decision Support Systems, Information Processing and Management, Journal of The American Society for Information Science And Technology, and IEEE Intelligent Systems. His work has also been published in various leading conferences including Proceedings of the International Conference of Information Systems, Annual Hawaii International Conference on System Sciences, Americas Conference on Information Systems, Workshop on Information Technologies and Systems, INFORMS Conference on Information Systems and Technology, and Meetings of Decision Sciences Institute.

Professor Pathak's teaching interests are in the field of Business Data Communications Management, Data Mining, Business Statistics, and Network Security. Prof. Pathak is Member of ACM, IEEE, INFORMS, DSI, and AIS. He is on the editorial board of Decision Sciences, and Journal of Database Management, a program committee member of Workshop on Information Technologies and Systems, and Conference on Information Systems and Technology, and an ad-hoc referee for Management Science, Information Systems Research, Information Processing and Management, International Conference of Information Systems, Hawaii International Conference on System Sciences, and Americas Conference on Information Systems. Before entering academics, Prof. Pathak had worked with Citibank, Index Computing, and Indian Telephone Industries. While at Citibank his team started the bank's mortgage business and established it across all of India.

### **Anand Paul**

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Anand Paul is the E.R. Beall Professor in the Department of Information Systems and Operations Management. He completed his Ph.D. at the University of Texas at Austin. He holds an MBA from the Indian Institute of Management and an undergraduate degree in Electrical Engineering from the Indian Institute of Technology. He teaches courses in quantitative methods and operations management. His research interests are in supply chain management and applied probability. His research has been published in *Management Science*, *Operations Research*, *M&SOM*, *Mathematics of Operations Research*, *Production and Operations Management*, *Marketing Science*, *IIE Transactions*, *Naval Research Logistics*, *European Journal of Operational Research*, *Journal of Mathematical Analysis and Applications*, and *Operations Research Letters*. Prior to embarking on a career in academia, Dr. Paul worked for three years in consulting.

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Selwyn is the Frank L. Weyenberg Term Professor of Information Systems at UF. He is a founding member of the RFID European Lab in Paris. He received his PhD from the University of Illinois at Urbana-Champaign in 1992. He has been at the University of Florida since Fall 1991. He taught in the Operations and Information Management department at the Wharton School of the University of Pennsylvania from 1998 to 2001. His research and teaching interests include artificial intelligence, cryptography, database management, data mining/machine learning, and simulation including their applications in computer integrated manufacturing, e-commerce, financial credit scoring, IoT, perishables, RFID, supply chain management, and work flow management. His research has been published in *Annals of Operations Research*, *Computer Communications*, *Conflict Management and Peace Science*, *Connection Science*, *Decision Support Systems*, *Engineering Applications of Artificial Intelligence*, *European Journal of Information Systems*, *European Journal of Operational Research*, *Expert Systems with Applications*, *IEEE Communications Letters*, *IEEE Transactions on Dependable and Secure Computing*, *IEEE Transactions on Education*, *IEEE Transactions on Engineering Management*, *IEEE Transactions on Information Forensics and Security*, *IEEE Transactions on Systems, Man, and Cybernetics*, *Information & Management*, *Information Sciences*, *Information Systems*

*Frontiers, Information Technology & Management, INFORMS Journal on Computing, International Journal of Computational Intelligence and Organizations, International Journal of Flexible Manufacturing Systems, International Journal of Production Economics, International Journal of Production Research, International Journal of RF Technologies: Research and Applications, Journal of Information & Knowledge Management, Journal of Information Privacy and Security, Journal of Medical Systems, Journal of Organizational Computing and Electronic Commerce, Journal of Theoretical and Applied Electronic Commerce Research, Management Science, Neural Network World, among others.*

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### **Tharanga Rajapakshe**

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Tharanga's research interests are in resolving novel issues that emerge in implementing socially responsible supply chains and in optimization theory and applications. She has published papers in the top tier journals in the area of Operations Management such as *Operations Research* and *Production and Operations Management*. Tharanga's teaching interests are in Operations Management, Supply Chain Management, Project Management, Logistics and Distribution.

### **Patrick A. Thompson**

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### **Asoo J. Vakharia**

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Asoo J. Vakharia is the McClatchy Professor and Director of the Center for Supply Chain Management in the Warrington College of Business Administration at the University of Florida. He has Ph.D. and M.B.A. degrees in Operations Management from the University of Wisconsin and a B.COM. in Accounting and Economics from Bombay University.

Asoo is a DSI and POMS Fellow and a recipient of the DSI Distinguished Service Award. His research examines contemporary issues in Supply Chain Management and Sustainability and has been published in the *Decision Sciences Journal*, the *European Journal of Operational Research*, *IIE Transactions*, the *Journal of Discrete Applied Mathematics*, the *Journal of Operations Management*, the *Naval Research Logistics Journal*, and the *Production & Operations Management Journal*. He is a **co-Department Editor** for the *Production and Operations Management Journal*.

Professor Vakharia's teaching interests are in Operations Management, International Logistics, Transportation and Logistics Systems, MPC/ERP Systems Integration, and Supply Chain Analytics. In addition to teaching in the graduate, MBA, and executive MBA programs at the University of Florida, he has also taught industry specific executive development courses in Managerial Decision Analysis, Quality Analysis/Statistical Methods, and Operations/Financial Analytics.

His industry experience includes starting a small business manufacturing and marketing leather goods, several years as a Management Consultant, and consulting activities with several companies including AT&T Solutions Customer Care, e-Diets.com, Golden Eagle Distributors, Garrett Air Research, Motorola, Sweetheart Cups, Inc., University of Arizona Medical Center, and Vistakon, Inc.