



Program Schedule

28th WORKSHOP ON INFORMATION TECHNOLOGIES AND SYSTEMS (WITS 2018)

December 16-18, 2018, Santa Clara, CA, USA

Sunday, December 16

12:30 pm Registration starts at Hyatt Place San Jose

Wine Tasting at Savannah–Chanelle Vineyards Location: 23600 Big Basin Way,
Saratoga, CA 95070 (RSVP Mandatory).

12:30 – 3:30 pm **Group 1:** Pick up from Hyatt Place San Jose at 12:30 pm, return to Hyatt at 3:30 pm

2:30 - 5:30 pm **Group 2:** Pick up from Hyatt Place San Jose at 2:30 pm, return to Hyatt at 5:30 pm

5:30 – 8:00 pm Reception and Registration at Hyatt Place San Jose

Monday, December 17

Shuttle from Hyatt to SCU (7:00 am, 7:40 am, 8:20 am, 9 am, 9:40 am, 10:40 am, 11:40 am)

Shuttle from SCU to Hyatt (7:20 am, 8:00 am, 8:40 am, 9:20 am, 10:10 am, 11:10 am)

8:00 – 8:30 am Continental Breakfast & Registration

Lucas Hall 2nd Floor

8:30 – 8:40 am Welcome Remarks and Logistics

Lucas Hall Bank of America Commons

8:40 – 9:30 am Industry Keynote Speech by Dr. Phil Mui, Senior VP of Salesforce

9:30 – 9:45 am Coffee Break

Lucas Hall 2nd Floor

9:45 – 11:00 am **Session 1A: Industry Presentations**

206 Lucas Hall

Session Chair: Jingjing Li, University of Virginia

Discovering Domain Specific Dialog Acts: A Quantitative and Unsupervised Method

Sabina Tomkins, University of California, Santa Cruz,

*Anbang Xu, Haibin Liu, Zhe Liu, Yufan Guo, Vibha Sinha, Rama Akkiraju, IBM Almaden
Research Center*

I Know You'll Be Back: Interpretable New User Clustering and Churn Prediction on a
Mobile Social Application

Carl Yang, University of Illinois, Urbana Champaign,

Xiaolin Shi, Jie Luo, Snap Inc,

Jiawei Han, University of Illinois, Urbana Champaign

Lessons We Learned from Applying Machine Learning to Adversarial Environment

Xiang Sheng, Facebook



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9:45 – 11:00 am **Session 1B: Healthcare I** **207 Lucas Hall**
Session Chair: Michael V. Mannino, University of Colorado Denver

Extended Similarity Measures to Predict Trauma Patient Mortality
Joel Fredrickson, Michael Mannino, Omar Alqahtani, Farnoush Banaei-Kashani
University of Colorado Denver

Multiple Disease Prediction: A Multi-label Learning Approach Using Deep Generative Learning and Biomedical Knowledge
Lin Qiu, Vaibhav Rajan, Bernard C. Y. Tan, National University of Singapore

A Deep Learning Architecture for De-identification of Patient Notes: Implementation and Evaluation (**Best Paper Nominee**)
Kaung Khin, Philipp Burckhardt, Rema Padman, Carnegie Mellon University

Session 1C: Data Mining **209 Lucas Hall**
Session Chair: Ken Peffers, University of Nevada Las Vegas

A Bivariate Dynamic Latent Difference Score Model for Longitudinal Data Analysis
Youyou Tao, Loyola Marymount University,
Katherine Masyn, Georgia State University,
Abhay Nath Mishra, Iowa State University,
Jeong-Ha Oh, Mark Keil, Georgia State University

Don't Classify, Translate: Multi-Level E-Commerce Product Categorization Via Machine Translation
Maggie Yundi Li, Stanley Kok, National University of Singapore,
Liling Tan, Rakuten Institute of Technology

On the Self-Consistency of K-Nearest Neighbors Technique
Gediminas Adomavicius, University of Minnesota,
Jingjing Zhang, Indiana University,
Meizi Zhou, University of Minnesota

11:00 – 11:15 am Coffee Break **Lucas Hall 2nd Floor**

11:15–12:30 pm **Session 2A: Industry Presentations** **206 Lucas Hall**
Session Chair: Jingjing Li, University of Virginia

Towards Real-time 3D Reconstruction using Consumer UAVs
Qiaosong Wang, eBay Inc.

Probabilistic Autocomplete Suggestion Ranking with Localization and Personalization in Geosearch
Xugang Ye, Zijie Qi, Dropbox

Visual Product Recognition – Bing Ads VPR API to Monetize Product Images
Jia He, Tim Wang, Hao Wang, Sravya Popuri, Keng-hao Chang, Bruce Zhang, Microsoft

Session 2B: Review and Recommendation **207 Lucas Hall**
Session Chair: Harry Wang, University of Delaware

How Does Online Review Manipulation Influence Sales? Evidence from the Hotel Industry



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11:15–12:30 pm *Cheng Nie, Iowa State University,
Zhiqiang (Eric) Zheng, Sumit Sarkar, University of Texas at Dallas*

How Would you Rate it? Anchoring Effects and User Personality Traits in Recommender Systems

*Konstantin Bauman, Temple University,
Tamilla Triantoro, Quinnipiac University*

Blockchain-Enabled Data Sharing Recommender Systems

*Xiaoying Xu, South China University of Technology,
Kaushik Dutta, University of South Florida,
Chunmian Ge, South China University of Technology*

Session 2C: Advertisement

209 Lucas Hall

Session Chair: Haiyang Feng, Tianjin University

“To Be or Not to Be” Designing L-Shape Advertising for Mobile Movie Streaming Service

*Taekyung Kim, University of Suwon,
Jihae Suh, Jaehwan Lee, Jinsoo Park, Byungjoon Yoo, Seoul National University*

The Effectiveness of Mobile Short-Message-Service Based Peak-Time Rebate Program for Household Electricity Demand Response

*Gloria JinaKim, KAIST,
Dongsik Jang, Korea Electric Power Research Institute,
Jiyong Eom, KAIST*

Budget-Constrained Ad Selection in Large-Scale Advertising Systems

*Hemant K. Bhargava, UC Davis,
Ramnik Arora, Stanford University*

12:30– 2:00 pm Lunch and Keynote Speech by Dr. Arun Rai, Georgia State University:
“Avoiding Type III Errors: Overcoming Competency Traps, Seizing New Opportunities”
Lucas Hall Bank of America Commons

2:00 – 3:15 pm **Session 3A: WITS Feeder Workshop (Smart Data Pricing)** **206 Lucas Hall**
Session Chair: Soumya Sen, University of Minnesota

Turbulence in Media and Entertainment: Chaos or a New Order?

H. Bhargava, UC Davis

Duopoly Competition in Advertising-Sponsored Wi-Fi Provision

*Joshua Eberhardt, Bharath Sreenivas, Illinois Mathematics and Science Academy,
Moksh Shah, Northwestern University*

Using Neural Detection for Truthful Crowdsourced Content Evaluation

*C. Huang, The Chinese University of Hong Kong,
H. Yu, Northwestern University,
J. Huang, The Chinese University of Hong Kong,
R. Berry, Northwestern University*

Sponsored Data: Smarter Data Pricing with Incomplete Information

*X. Mei, The Hong Kong Polytechnic University
L. Qiu, University of Florida*



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2:00 – 3:15 pm **Session 3B: Health Care II** **207 Lucas Hall**
Session Chair: Kang Zhao, University of Iowa

Using Deep Learning to Improve Healthcare Quality and Efficiency (*Best Dissertation proposal Nominee*)

Weiguang Wang, University of Maryland

Drug-Drug Interaction Mining and Interaction Terms Extraction using Deep Learning: A Word-level Attention Bi-Directional LSTM

Zhengchao Yang, Sudha Ram, Faiz Currim, University of Arizona

Social Support and User Churn Prediction for Online Health Communities -- A

Trajectory-based Deep Learning Method

Xiangyu Wang, University of Iowa,

Apoorva Joshi, FireEye, Inc.

Xun Zhou, Kang Zhao, University of Iowa

Session 3C: Dissertation Proposals

209 Lucas Hall

Session Chair: Yuheng Hu, University of Illinois at Chicago

Health Information Exchanges: Impact on Healthcare Costs, Referral Networks, and Induced-Utility in Referral Processes (*Best Dissertation proposal Nominee*)

Saeede Eftekhari, University at Buffalo

Predicting Labor Market Competition and Employee Mobility --- A Machine Learning Approach (*Best Dissertation proposal Nominee*)

Yuanyang Liu, University of Iowa

Essays on Operational Problems in Digital Economy (*Best Dissertation proposal Nominee*)

Rakesh Mallipeddi, Texas A&M, College Station

3:15 pm Pick up from Santa Clara University to Commodore Cruise at 2394-A Mariner Square Drive, Alameda, CA, 94501

5:45 pm Cruise Boarding

6:00 – 9:00 pm Commodore Cruise Tour of San Francisco Bay

9:15 pm Pick up from Commodore Cruise back to Hyatt Place San Jose



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Tuesday, December 18

Shuttle from Hyatt to SCU (7:00 am, 7:40 am, 8:20 am, 9 am, 9:40 am, 10:40 am, 11:40 am)

Shuttle from SCU to Hyatt (7:20 am, 8:00 am, 8:40 am, 9:20 am, 10:10 am, 11:10 am)

8:00–8:15 am Registration and Networking with Coffee and Tea **Lucas Hall 2nd Floor**

8:15–9:30 am **Session 4A: Data Science Applications** **206 Lucas Hall**

Session Chair: Balaji Padmanabhan, University of South Florida

Characterizing Social TV Activity Around Televised Events: A Joint Topic Model Approach (*Best Paper Nominee*)

Yuheng Hu, University of Illinois at Chicago

Mining Reputation Effects in Citations of Scientific Publications

Moez Farokhnia, He Zhang, Balaji Padmanabhan, University of South Florida

Waiting to be Found: Using Data Science to Discover TV Programs for Public Service Announcements

Arash Barfar, University of Nevada,

Balaji Padmanabhan, University of South Florida

Session 4B: Predictive Analytics **207 Lucas Hall**

Session Chair: Abhay Nath Mishra, Iowa State University

The misty crystal ball: Efficient concealing of privacy-sensitive attributes in predictive analytics

Nicolas Banholzer, Stefan Feuerriegel, ETH Zurich

Do Better Predictions Lead to Better Decisions? Insights from Predictive Policing

Oliver Dlugosch, University of Freiburg,

Tobias Brandt, Erasmus University Rotterdam,

Dirk Neumann, University of Freiburg

Patient Health Status Prediction: A Multi-State Markov Model

Youyou Tao, Loyola Marymount University,

Abhay Nath Mishra, Iowa State University,

Yichen Cheng, Georgia State University

Session 4C: Social Media & Reviews **209 Lucas Hall**

Session Chair: Xianjun Geng, Tulane University

Topic-based Intervention on Social Media Network Search

Clinton Daniel, Donald Berndt, University of South Florida

How do Social Ties Influence User-Generated Content: A Dynamic Perspective

Yue Jin, Tsinghua University,

Yong Tan, University of Washington,

Jinghua Huang, Tsinghua University

How Online Reviews Interact with A Firm's Free Version Strategy

Huanhuan Cao, Zhejiang University of Technology,

Jinhu Jiang, Xi'an Jiaotong University,

Xianjun Geng, Tulane University

Online Reputational Loss Aversion: Empirical evidence from StackOverflow

Ramesh Shankar, University of Connecticut



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9:30 – 9:45 am	Coffee Break	Lucas Hall 2 nd Floor
9:45 – 11:00 am	Session 5A: Crowd Platforms <i>Session Chair: Junming Yin, University of Arizona</i> Matching Donors to Projects on Philanthropic Crowdfunding Platforms <i>Yicheng Song, University of Minnesota,</i> <i>Zhuoxin Li, Nachiketa Sahoo, Boston University</i> Investigating the Fee-Delay Relationship in Cryptocurrency Transactions: Evidence from the Bitcoin Network <i>Noyan Ilk, Guangzhi Shang, Florida State University,</i> <i>Shaokun Fan, Oregon State University</i> Towards Better Learning from Crowd Labeling: A Variational Inference Approach (<i>Best Paper Nominee</i>) <i>Jerry Luo, Xuan Wei, Daniel Dajun Zeng, Junming Yin, University of Arizona</i>	206 Lucas Hall
	Session 5B: Two-Sided Platform <i>Session Chair: Pallab Sanyal, George Mason University</i> Meet an Emergency? An Empirical Analysis on Productivity of Taxi and Ridesharing Platforms <i>Yingjie Zhang, UT Dallas,</i> <i>Beibei Li, Zhen (Sean) Qian, CMU</i> Technology Restriction and Demand Shifts in Transportation Dynamics: An Empirical Study <i>Kyungsun (Melissa) Rhee, University of Washington,</i> <i>Jinyang Zheng, Purdue University,</i> <i>Yuowei Wang, Fudan University,</i> <i>Yong Tan, University of Washington</i> Time Preference based Cloud Resource Management <i>Anik Mukherjee, Sundarraj P Rangaraja, Indian Institute of Technology</i>	207 Lucas Hall
	Session 5C: Language Processing <i>Session Chair: Jingjing Li, University of Virginia</i> A Deep Learning Architecture for Psychometric Natural Language Processing <i>Jingjing Li, Ahmed Abbasi, Faizan Ahmad, University of Virginia,</i> <i>Hsinchun Chen, University of Arizona</i> Aspect Extraction from Online Consumer Reviews with WordNet-Guided Continuous-Space Language Models (<i>Best Paper Nominee</i>) <i>Jie Tao, Fairfield University,</i> <i>Lina Zhou, The University of North Carolina at Charlotte,</i> <i>Conor Feeney, Fairfield University</i> Predicting Complainers on Social Media: A Machine Learning Approach <i>Yuheng Hu, Ali Tafti, David Gal, University of Illinois at Chicago</i>	209 Lucas Hall
11:00 – 11:15 am	Coffee Break	Lucas Hall 2 nd Floor
11:15–12:30 pm	Poster Slam Session <i>Session Chair: Hong Guo, University of Notre Dame</i>	Lucas Hall 105
12:30 – 2:00 pm	Lunch and WITS Awards	Lucas Hall Bank of America Commons



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2:00 – 3:15 pm	Session 6A: Data Mining <i>Session Chair: Carson Woo, University of British Columbia</i> Data Challenges in the Digitization Era <i>Veda C. Storey, Georgia State University, Carson C. Woo, University of British Columbia</i> Optimal Classification Performance Metric for Constructing Variables for Further Regression Analysis <i>Mengke Qiao, Ke-Wei Huang, National University of Singapore</i> Role of Reference Points in the Goal-directed Website: A Randomized Field Experiment <i>Qinglai He, Victor Benjamin, Yili Hong, Raghu Santanam, Arizona State University</i>	206 Lucas Hall
	Session 6B: Digital Economy <i>Session Chair: Wolfgang Ketter, Erasmus University Rotterdam</i> The Impact of Price Perception in the Dynamics of Competition in an On-Demand Economy Environment: A Differential Games Approach <i>Samayita Guha, Temple University, Emre Demirezen, University of Florida, Subodha Kumar, Temple University</i> Data Acquisition Accounting for Customer Heterogeneity <i>Xiaoping Liu, Northeastern University, Xiao-Bai Li, University of Massachusetts Lowell</i> Towards Efficient Energy Management: Transforming Energy Business with IT <i>Dmitry Zhdanov, Georgia State University</i> FleetPower: Creating Virtual Power Plants in Sustainable Smart Electricity Markets <i>Micha Kahlen, Erasmus University Rotterdam Alok Gupta, University of Minnesota Wolfgang Ketter, Erasmus University Rotterdam</i>	207 Lucas Hall
	Session 6C: Online Communities <i>Session Chair: Benjamin Shao, Arizona State University</i> Bursty Coordination in Online Communities <i>Lei (Nico) Zheng, Feng Mai, Stevens Institute of Technology, Deborah M. Gordan, Stanford University, Jeffrey V. Nickerson, Stevens Institute of Technology</i> Auction Parameters and Bidder Entry: Evidence from Online Outsourcing Platforms <i>Yili (Kevin) Hong, Benjamin Shao, Pei-yu Chen, Chen Liang, Arizona State University</i> Online Privacy and Information Disclosure by Consumers <i>Shota Ichihashi, Bank of Canada</i>	209 Lucas Hall
3:15 – 4:00 pm	Coffee Break / Academic Demo/Prototype	Lucas Hall 2nd Floor
4:00 – 4:45 pm	WITS General Body Meeting	Lucas Hall 107
4:45 – 6:15 pm	Shuttle from SCU to Hyatt Hotel (pick up times: 4:45 pm, 5:30 pm, 6:15 pm)	
6:45 pm	Pick up from Hyatt Hotel to Maggiano's Little Italy at Santana Row	
7:00 – 9:00 pm	Dinner at Maggiano's Little Italy at Santana Row (RSVP Mandatory)	



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Poster Session Papers

<p>Optimal Release Strategy for the Competing Software Vendors in the Presence of Word-Of-Mouth Effect</p> <p><i>Yu Wang (College of Management and Economics, Tianjin University, Tianjin P. R. China), Minqiang Li (College of Management and Economics, Tianjin University, Tianjin P. R. China), Haiyang Feng, Nan Feng (College of Management and Economics, Tianjin University, Tianjin P. R. China)</i></p>
<p>Digitally Nudged: How Websites Influence Donation Behavior</p> <p><i>Markus Weinmann (University of Liechtenstein), Christoph Schneider (City University of Hong Kong), Nadine Székely (University of Liechtenstein), Jan vom Brocke (University of Liechtenstein)</i></p>
<p>A Machine Learning Approach to Identify Fake News and Clickbait Websites</p> <p><i>R. Gopal (Indian Institute of Management, India.), H. Hidaji (University of Calgary, Canada.), S. N. Kutlu (University of Connecticut, USA.), R. A. Patterson (University of Calgary, Canada.)</i></p>
<p>Topic Modeling in Twitter: An Attribute Lattice-Based Approach</p> <p><i>Mojtaba Asgari (Memorial University of Newfoundland, St. John's, NL.), Jeffrey Parsons (Memorial University of Newfoundland, St. John's, NL.)</i></p>
<p>Competition in Online Consumer Ratings: An Equilibrium Analysis</p> <p><i>Mingwen Yang (University of Texas at Dallas, Richardson, TX), Eric Zheng (University of Texas at Dallas, Richardson, TX), Vijay Mookerjee, (University of Texas at Dallas, Richardson, TX)</i></p>
<p>Impact of Collection Structures and Type of Data on Quality of User-Generated Content</p> <p><i>Mahed Maddah (Florida International University), Roman Lukyanenko (HEC Montréal), Debra VanderMeer (Florida International University)</i></p>
<p>Managing Externalities of Internet Security with Scoring Rules</p> <p><i>Xiaofan Li, Andrew Whinston</i></p>
<p>Creation of Homophilous Networks Using Simulated Annealing</p> <p><i>Lev Muchnik (Jerusalem School of Business Administration, The Hebrew University of Jerusalem), Arie Jacobi (Ono Academic College, Kiryat Ono, Israel), Dylan Walker (Questrom School of Business, Boston University)</i></p>
<p>A Classification Artifact to Support Mental Health Surveillance: A Comparison of Feature and Classifier Ensembles</p> <p><i>Yang Gu (University of Arizona, Tucson, Arizona), Gondy Leroy (University of Arizona, Tucson, Arizona), Mihai Surdeanu (University of Arizona, Tucson, Arizona), Sydney Pettygrove (University of Arizona, Tucson, Arizona)</i></p>
<p>If You Can't Measure it, You Can't Manage it</p> <p><i>Arion Cheong (Rutgers Business School), Soohyun Cho (Rutgers Business School), Won Gyun No (Rutgers Business School), Miklos A. Vasarhelyi (Rutgers Business School)</i></p>
<p>Persistence of Consumer Preference Biases in Recommender Systems</p> <p><i>Gedaminas Adomavicius (University of Minnesota), Jesse Bockstedt (Emory University), Shawn Curley (University of Minnesota), Jingjing Zhang (Indiana University)</i></p>
<p>From Head to Long Tail: Flexible Recommendation using Cosine Patterns</p> <p><i>Yaqiong Wang (Carlson School of Management, University of Minnesota), Junjie Wu (School of Economics and Management, Beihang University), Zhiang Wu (Jiangsu Provincial Key Laboratory of E-Business, Nanjing University of Finance and Economic), Gediminas Adomavicius (Carlson School of Management, University of Minnesota)</i></p>



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Telematics Sensor Data Analytics for Sustainable Business: Transportation and Backhaul Collaboration <i>Sudip Bhattacharjee (School of Business, University of Connecticut), Robert Day (School of Business, University of Connecticut), Mohsen Emadikhav (School of Business, University of Connecticut)</i>
I Know Where You Are: A Deep Learning Approach to Predict Location for Personalized Mobile Targeting <i>Da Xu (David Eccles School of Business, University of Utah), Xiao Fang (Lerner College of Business and Economics, University of Delaware), Paul Jen-Hwa Hu (David Eccles School of Business, University of Utah)</i>
Utility Maximization in Physicians' Referral Networks: Model and Methodology <i>Saeede Eftekhari (State University of New York at Buffalo), Niam Yaraghi (University of Connecticut), Ram Gopal (University of Connecticut), Ram Ramesh (State University of New York at Buffalo)</i>
The Price of Being Polite <i>Yi Wang (Rochester Institute of Technology)</i>

Demo/Prototypes

SCNetworkViz: A Web-Based System for Interactive Visualization of Supply Chain Network <i>Yihong Liu (Shanghai University of Finance and Economics), Hui Fang (Shanghai University of Finance and Economics), Yao Bao (Shanghai Jiao Tong University)</i>
Addressing the Cybersecurity Talent Gap through a Serious Games Approach with Young Adults <i>Laura Amo (SUNY at Buffalo), Joana Gaia (SUNY at Buffalo), Savit Aluri(SUNY at Buffalo), Jonathan Higgins(SUNY at Buffalo), David Murray(SUNY at Buffalo), Kevin Cleary (SUNY at Buffalo), Shambhu Upadhyaya (SUNY at Buffalo)</i>
A Serious Game for Data Warehouse Maturity Concepts <i>Michael Mannino (University of Colorado Denver), Mohammed Khojah (King Abdul-Aziz University)</i>
Demo: An Online Evidence-based Text Simplification Editor for Medical Text <i>David Kauchak (Pomona College), Gondy Leroy (University of Arizona), Melissa Grueter (Pomona College)</i>
Context-Adaptable Trigger: A New IS Paradigm and Challenge <i>Ji Taek Lim (Pohang University of Science and Technology), Hokyoom Kim (Pohang University of Science and Technology), Injun Choi (Pohang University of Science and Technology)</i>
Finding a Collaborative Outsourced Team: A Search System Over Social Coding Websites <i>Ahmad Jowhar (Ted Rogers School of Management, Ryerson University), Morteza Zihayat (Ted Rogers School of Management, Ryerson University)</i>
PUSH: A Blockchain-based Application for Provider Facilitated Patient-to-Patient Sharing of Medical Records and Clinical Pathways for Collaborative Decision Support <i>Lina Bouayad (Florida International University), Hemant Jain (Rollins College of Business, The University of Tennessee at Chattanooga), Monica Tremblay (College of William and Mary), Carmelo Gaudioso (Roswell Park Comprehensive Cancer Center)</i>
Dynamic Cybersecurity Risk Score Measurement for US Public Firms <i>Arion Cheong (Rutgers, The State University of New Jersey), Soohyun Cho (Rutgers, The State University of New Jersey), Won Gyun No (Rutgers, The State University of New Jersey), Miklos Vasarhelyi (Rutgers, The State University of New Jersey)</i>