Mohsen Bayati
Associate Professor of Operations, Information and Technology at the Graduate School of Business and, by courtesy, of Electrical Engineering
Operations, Information & Technology

Bio

https://web.stanford.edu/~bayati/bio.html

ACADEMIC APPOINTMENTS
- Associate Professor, Operations, Information & Technology
- Associate Professor (By courtesy), Electrical Engineering
- Member, Bio-X
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

HONORS AND AWARDS
- National Science Foundation CAREER Award, Stanford University (2016)
- William Pierskalla best paper award, INFORMS Health Applications Society (2016)
- William Pierskalla best paper award, INFORMS Health Applications Society (2014)

LINKS
- Homepage: https://web.stanford.edu/~bayati/
- Department website: http://www.gsb.stanford.edu/faculty-research/faculty/mohsen-bayati

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS
https://web.stanford.edu/~bayati/pub-chron.html

Teaching

COURSES

2020-21
- Business Intelligence from Big Data: OIT 367 (Win)

2019-20
• Business Intelligence from Big Data: OIT 367 (Win)
• Data, Learning, and Decision-Making: OIT 604 (Spr)
• Research in Operations, Information and Technology: OIT 644 (Win)

2018-19
• Business Intelligence from Big Data: OIT 367 (Win)
• Data, Learning, and Decision-Making: OIT 604 (Spr)

STANFORD ADVISEES
Zhuoyang Liu

Doctoral Dissertation Reader (AC)
Sanath Kumar Krishnamurthy

Doctoral Dissertation Advisor (AC)
Wanning Chen, Jacqueline Vallon

Doctoral (Program)
Abdullah Coskun, Ludovico Crippa, Yuwei Luo, Giacomo Mantegazza, Bryce McLaughlin, Ilan Morgenstern, Daniil Vishnev, Alper YILMAZ, Mingxi Zhu

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS
• Biomedical Informatics (Phd Program)

Publications

PUBLICATIONS
• Online Decision Making with High-Dimensional Covariates  OPERATIONS RESEARCH
  Bastani, H., Bayati, M.
  2020; 68 (1): 276–94

• Evidence of Upcoding in Pay-for-Performance Programs  MANAGEMENT SCIENCE
  Bastani, H., Goh, J., Bayati, M.
  2019; 65 (3): 1042–60

• Scalable Approximations for Generalized Linear Problems  JOURNAL OF MACHINE LEARNING RESEARCH
  Erdogdu, M. A., Bayati, M., Dicker, L. H.
  2019; 20

• Personalizing Many Decisions with High-Dimensional Covariates  Advances in Neural Information Processing Systems 32
  Hamidi, N., Bayati, M., Gupta, K.
  2019

• Generating Random Networks Without Short Cycles  OPERATIONS RESEARCH
  Bayati, M., Montanari, A., Saberi, A.
  2018; 66 (5): 1227–46

• Data Uncertainty in Markov Chains: Application to Cost-Effectiveness Analyses of Medical Innovations  OPERATIONS RESEARCH
  Goh, J., Bayati, M., Zenios, S. A., Singh, S., Moore, D.
  2018; 66 (3): 697–715

• Accurate Emergency Department Wait Time Prediction  M&SOM-MANUFACTURING & SERVICE OPERATIONS MANAGEMENT
  Ang, E., Kwasnick, S., Bayati, M., Plambeck, E. L., Aratow, M.
  2016; 18 (1): 141-156
• Scaled Least Squares Estimator for GLMs in Large-Scale Problems
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2016

• Statistical analysis of a low cost method for multiple disease prediction. Statistical methods in medical research
Bayati, M., Bhaskar, S., Montanari, A.
2016: 962280216680242-7

• Active Postmarketing Drug Surveillance for Multiple Adverse Events OPERATIONS RESEARCH
Goh, J., Bjarnadottir, M. V., Bayati, M., Zenios, S. A.
2015; 63 (6): 1528-1546

• UNIVERSALITY IN POLYTOPE PHASE TRANSITIONS AND MESSAGE PASSING ALGORITHMS ANNALS OF APPLIED PROBABILITY
Bayati, M., Lelarge, M., Montanari, A.
2015; 25 (2): 753-822

• Bargaining dynamics in exchange networks JOURNAL OF ECONOMIC THEORY
Bayati, M., Borgs, C., Chayes, J., Kanoria, Y., Montanari, A.
2015; 156: 417-454

• A Low-Cost Method for Multiple Disease Prediction. AMIA ... Annual Symposium proceedings / AMIA Symposium, AMIA Symposium
Bayati, M., Bhaskar, S., Montanari, A.
2015; 2015: 329-338

• Identifying Patients at High Risk for Readmission following Treatment for Acute Myocardial Infarction: a Data-Centric Approach
LIPPINCOTT WILLIAMS & WILKINS.2014

• Data-driven decisions for reducing readmissions for heart failure: general methodology and case study. PloS one
2014; 9 (10): e109264

• COMBINATORIAL APPROACH TO THE INTERPOLATION METHOD AND SCALING LIMITS IN SPARSE RANDOM GRAPHS ANNALS OF PROBABILITY
Bayati, M., Gamarnik, D., Tetali, P.
2013; 41 (6): 4080-4115

• Message-Passing Algorithms for Sparse Network Alignment ACM TRANSACTIONS ON KNOWLEDGE DISCOVERY FROM DATA
Bayati, M., Gleich, D. F., Saberi, A., Wang, Y.
2013; 7 (1)

• Estimating LASSO Risk and Noise Level Neural Information Processing Systems 26
Bayati, M., Erdogdu, M., Montanari, A.
2013

• The LASSO Risk for Gaussian Matrices IEEE TRANSACTIONS ON INFORMATION THEORY
Bayati, M., Montanari, A.

• The Dynamics of Message Passing on Dense Graphs, with Applications to Compressed Sensing IEEE International Symposium on Information Theory
Bayati, M., Montanari, A.
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2011: 764–85

• BELIEF PROPAGATION FOR WEIGHTED k-MATCHINGS ON ARBITRARY GRAPHS AND ITS RELATION TO LINEAR PROGRAMS WITH INTEGER SOLUTIONS SIAM JOURNAL ON DISCRETE MATHEMATICS
Bayati, M., Borgs, C., Chayes, J., Zecchina, R.
2011; 25 (2): 989-1011

• A Sequential Algorithm for Generating Random Graphs ALGORITHMICA
Bayati, M., Kim, J. H., Saberi, A.
• A rigorous analysis of the cavity equations for the minimum spanning tree JOURNAL OF MATHEMATICAL PHYSICS
Bayati, M., Braunstein, A., Zecchina, R.
2008; 49 (12)

• Statistical mechanics of Steiner trees PHYSICAL REVIEW LETTERS
Bayati, M., Borgs, C., Braunstein, A., Chayes, J., Ramezanpour, A., Zecchina, R.
2008; 101 (3): 037208

• On the exactness of the cavity method for weighted b-matchings on arbitrary graphs and its relation to linear programs JOURNAL OF STATISTICAL MECHANICS-THEORY AND EXPERIMENT
Bayati, M., Borgs, C., Chayes, J., Zecchina, R.
2008

• Max-product for maximum weight matching: Convergence, correctness, and LP duality
Bayati, M., Shah, D., Sharma, M.
IEEE-INSTITUTION OF ELECTRICAL AND ELECTRONICS ENGINEERS INC. 2008: 1241–51

• Simple Deterministic Approximation Algorithms for Counting Matchings STOC 07: PROCEEDINGS OF THE 39TH ANNUAL ACM SYMPOSIUM ON THEORY OF COMPUTING
Bayati, M., Gamarnik, D., Katz, D., Nair, C., Tetali, P.
2007: 122-127

• Iterative scheduling algorithms 26th IEEE Conference on Computer Communications (INFOCOM 2007)
Bayati, M., Prabhakar, B., Shah, D., Sharma, M.
IEEE.2007: 445–453

• A simpler max-product Maximum Weight Matching algorithm and the auction algorithm IEEE International Symposium on Information Theory
Bayati, M., Shah, D., Sharma, M.
IEEE.2006: 557–561

• Maximum weight matching via max-product belief propagation IEEE International Symposium on Information Theory and Its Applications
Bayati, M., Shah, D., Sharma, M.
IEEE.2005: 1763–1767

• Achieving stability in networks of input-queued switches using a local online scheduling policy GLOBECOM ’05: IEEE GLOBAL TELECOMMUNICATIONS CONFERENCE, VOLS 1-6
Nabar, S. U., Kumar, N., Bayati, M., Keshavarzian, A.
2005: 694-698