



Mohsen Bayati

Carl and Marilyn Thoma Professor in the Graduate School of Business and Professor, by courtesy, of Electrical Engineering and of Radiation Oncology (Radiation Therapy)

Operations, Information & Technology

 Curriculum Vitae available Online

Bio

BIO

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

ACADEMIC APPOINTMENTS

- Professor, Operations, Information & Technology
- Professor (By courtesy), Electrical Engineering
- Professor (By courtesy), Radiation Oncology - Radiation Therapy
- 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)
- Best paper award, INFORMS Applied Probability Society (2015)
- William Pierskalla best paper award, INFORMS Health Applications Society (2014)
- Gold Medal, International Mathematics Olympiad (1997)

LINKS

- Homepage: <https://web.stanford.edu/~bayati/>
- Department website: <http://www.gsb.stanford.edu/faculty-research/faculty/mohsen-bayati>
- Google Scholar Page: <https://scholar.google.com/citations?user=PS-TM94AAAAJ>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

<https://web.stanford.edu/~bayati/pub-chron.html>

Teaching

COURSES

2025-26

- Business Intelligence from Big Data: OIT 367 (Win)
- Management Science in the Age of AI: OIT 612 (Aut)

2024-25

- Business Intelligence from Big Data: OIT 367 (Win)
- Data, Learning, and Decision-Making: OIT 604 (Aut)

2023-24

- Business Intelligence from Big Data: OIT 367 (Win)
- Research in Operations, Information and Technology: OIT 644 (Win)

2022-23

- Business Intelligence from Big Data: OIT 367 (Win)
- Research in Operations, Information and Technology: OIT 644 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Anders Wikum, Wanqiao Xu

Orals Chair

Misha Ivkov

Doctoral Dissertation Advisor (AC)

William Overman, Sadegh Shirani, Joyee Wang

Doctoral (Program)

William Overman, Tony Ye

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biomedical Data Science (Phd Program)

Publications

PUBLICATIONS

- **Large language models for preventing medication direction errors in online pharmacies.** *Nature medicine*
Pais, C., Liu, J., Voigt, R., Gupta, V., Wade, E., Bayati, M.
2024
- **Predicting Primary Care Physician Burnout From Electronic Health Record Use Measures.** *Mayo Clinic proceedings*
Tawfik, D., Bayati, M., Liu, J., Nguyen, L., Sinha, A., Kannampallil, T., Shanafelt, T., Profit, J.
2024
- **Optimal Experimental Design for Staggered Rollouts** *MANAGEMENT SCIENCE*
Xiong, R., Athey, S., Bayati, M., Imbens, G.
2023
- **Technical Note-The Elliptical Potential Lemma for General Distributions with an Application to Linear Thompson Sampling** *OPERATIONS RESEARCH*
Hamidi, N., Bayati, M.
2022
- **On Low-rank Trace Regression under General Sampling Distribution** *JOURNAL OF MACHINE LEARNING RESEARCH*
Hamdi, N., Bayati, M.

2022; 23

- **Frustration With Technology and its Relation to Emotional Exhaustion Among Health Care Workers: Cross-sectional Observational Study.** *Journal of medical Internet research*
Tawfik, D. S., Sinha, A., Bayati, M., Adair, K. C., Shanafelt, T. D., Sexton, J. B., Profit, J.
2021; 23 (7): e26817
- **Matrix Completion Methods for Causal Panel Data Models** *JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION*
Athey, S., Bayati, M., Doudchenko, N., Imbens, G., Khosravi, K.
2021
- **Mostly Exploration-Free Algorithms for Contextual Bandits** *MANAGEMENT SCIENCE*
Bastani, H., Bayati, M., Khosravi, K.
2021; 67 (3)
- **PatientFlowNet: A Deep Learning Approach to Patient Flow Prediction in Emergency Departments** *IEEE ACCESS*
Sharafat, A. R., Bayati, M.
2021; 9: 45552–61
- **Online Decision Making with High-Dimensional Covariates** *OPERATIONS RESEARCH*
Bastani, H., Bayati, M.
2020; 68 (1): 276–94
- **Recommendation on a Budget: Column Space Recovery from Partially Observed Entries with Random or Active Sampling**
Kim, C., Bayati, M.
edited by Chiappa, S., Calandra, R.
ADDISON-WESLEY PUBL CO.2020: 445–54
- **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**
Hamidi, N., Bayati, M., Gupta, K.
edited by Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **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**
Erdogdu, M. A., Bayati, M., Dicker, L. H.
edited by Lee, D. D., Sugiyama, M., Luxburg, U. V., Guyon, Garnett, R.

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-?
- **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**
Baker, N. C., Bayati, M., Torguson, R., Mack, K., Rappaport, H., Horvitz, E., Waksman, R.
LIPPINCOTT WILLIAMS & WILKINS.2014
- **Data-driven decisions for reducing readmissions for heart failure: general methodology and case study.** *PLoS one*
Bayati, M., Braverman, M., Gillam, M., Mack, K. M., Ruiz, G., Smith, M. S., Horvitz, E.
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.
2012; 58 (4): 1997-2017
- **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 b-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.
2010; 58 (4): 860-910

- **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., Ramezanzpour, 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-INST ELECTRICAL 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