

Diego Klabjan

Professor, Industrial Engineering and Management Sciences
Founding Director, Master of Science in Analytics
Northwestern University
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EMPLOYMENT

NORTHWESTERN UNIVERSITY

Professor
Founding Director, Master of Science in Analytics
Associate Professor

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Visiting Professor

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Associate Professor
Assistant Professor

Evanston, IL
September 2012 – Present
March 2010 – Present
September 2007 – September 2012
Cambridge, MA
June 2005 – August 2006
Urbana-Champaign, IL
September 2006 – August 2007
August 1999 – August 2005

EDUCATION

Georgia Institute of Technology

Ph.D. in Algorithms, Combinatorics and Optimization, July 1999

- Dissertation: Topics in Airline Crew Scheduling and Large-scale Optimization (*Advisors:* G. Nemhauser and E. Johnson)

University of Ljubljana

BS in Applied Mathematics, July 1994

- Dissertation: A Randomized Algorithm for Computing the Volume of a Convex Set (*Advisor:* Bojan Mohar)

Atlanta, GA

Ljubljana, Slovenia

RESEARCH EXPERTISE

- Deep learning (image and natural language processing, temporal data)
- Machine learning (classification, ontology building)
- Data science and big data (large-scale optimization for machine learning, information retrieval)

SELECT AWARDS

- 2017 IEEE International Conference on Information Reuse and Integration, Best Student Paper (by Ph.D. student Xiaofeng Zhu)
- 2015 INFORMS Computing Society, Best Student Paper (by Ph.D. student Young Woong Park)
- 2006 Best Student Paper, The 22nd International Conference on Data Engineering, Atlanta, GA (by Ph.D. student Hector Gonzales)
- 2000 First Prize Transportation Science Section Dissertation Prize, INFORMS, Washington DC
- 1994 Preseren's Award for the Best Undergraduate Thesis, University of Ljubljana, Slovenia

SELECT PUBLICATIONS

- J. Koo, D. Klabjan, and J. Utke. Combined Convolutional and Recurrent Neural Networks for Hierarchical Classification of Images. [arXiv:1809.09574](https://arxiv.org/abs/1809.09574)
- A. Stec, D. Klabjan, and J. Utke. Unified Recurrent Neural Network for Many Feature Types. [arXiv:1809.08717](https://arxiv.org/abs/1809.08717)
- M. Harmon and D. Klabjan. Dynamic Prediction Length for Time Series with Sequence to Sequence Network. [arXiv:1807.00425](https://arxiv.org/abs/1807.00425)
- Y. Ma and D. Klabjan, Convergence Analysis of Batch Normalization for Deep Neural Nets. [arXiv:1705.08011](https://arxiv.org/abs/1705.08011)
- A. Stec, D. Klabjan, and J. Utke. Nested Multi-Instance Image Classification. [arXiv:1808.10430](https://arxiv.org/abs/1808.10430)
- B. Wang and D. Klabjan. Generative Adversarial Nets for Multiple Text Corpora. [arXiv:1712.09127](https://arxiv.org/abs/1712.09127)
- M. Harmon and D. Klabjan. Activation Ensembles for Deep Neural Networks. [arXiv:1702.07790](https://arxiv.org/abs/1702.07790)
- B. Wang and D. Klabjan. An Attention-Based Deep Net for Learning to Rank. [arXiv:1702.06106](https://arxiv.org/abs/1702.06106)
- X. Wang and D. Klabjan. Competitive Multi-agent Inverse Reinforcement Learning with Sub-optimal Demonstrations. *ICML*, Stockholm, Sweden 2018. [arXiv:1801.02124](https://arxiv.org/abs/1801.02124)
- D. Klabjan, M. Di, L. Sha and P. Lucey. Large-scale Adversarial Sports Play Retrieval with Learning to Rank. To appear in *ACM Transactions on Knowledge Discovery from Data*, 2017.

- Y.W. Park and D. Klabjan. Bayesian Network Learning via Topological Order. *Journal of Machine Learning Research*, 2017.
- C. Qin, D. Russo, and D. Klabjan, Improving the Expected Improvement Algorithm. *NIPS*, Long Beach, CA 2017.
- B. Wang and D. Klabjan. Regularization for Unsupervised Deep Neural Nets. *AAIA*, San Francisco, CA 2017.
- Y. Park and D. Klabjan. Iteratively Reweighted Least Squares Algorithms for L1-Norm Principal Component Analysis. *International Conference on Data Mining*, Barcelona, Spain 2016.
- M. Dixon, D. Klabjan, and J.H. Bang. Implementing Deep Neural Networks for Financial Market Prediction on the Intel Xeon Phi. *Supercomputing*, Austin, TX 2015.
- H. Gonzalez, J. Han, H. Cheng, X. Li, D. Klabjan and T. Wu, Modeling Massive RFID Datasets: A Gateway-Based Movement-Graph Approach. *IEEE Transactions on Knowledge and Data Engineering* 2010.
- H. Gonzales, J. Han, X. Li, and D. Klabjan. Warehousing and Analyzing Massive RFID Data Sets. *Proceedings of the 22nd International Conference on Data Engineering*, Atlanta, GA 2006.

ACTIVITIES

Advising more than 15 Ph.D. students (graduated 17 Ph.D. candidates)

Collaboration partners: Allstate, HSBC, Intel, General Motors, Abbvie, and many more

Technical Advisory Board member: AT Kearney, Alpine Data, IRI Big Data

Advising several start-up companies on data science and analytics

Co-Founder of Opex Analytics LLC: data science service provider with more than 70 employees (www.opexanalytics.com)

MS IN ANALYTICS PROGRAM

Established the program in 2011 – one of the very early such programs

Director, 2011- present

One of the elite programs in the country (top 6 based on Forbes)

Excels in combining machine learning rigor and practice through a very agile curriculum and numerous collaborations with industry partners

High quality, very competitive with extremely low acceptance rate

RECENT PROFESSIONAL ACTIVITIES

Evanston Mayor's Wind Farm Committee

Chair INFORMS University Analytics Program Committee (2013-2017)

Advisory Board, Chicago Park District (2013-2014)

Advisory Board member INFORMS Business Analytics (2009-present)

Main Organizer

Conference: The Business of Big Data, San Jose, CA (2014)

Workshop: Innovation in Big Data Analytics, San Jose, CA (2012)

Workshop: The Greening of Transportation, Evanston, IL (2009)

Workshop: Business Intelligence in Transportation, Evanston, IL (2009)

RECENT CORPORATE INVITED LECTURES

2018: Principal Financial

2017: Wolfe Research, Allstate

2016: General Motors, McDonalds, Schneider Logistics

RECENT ACADEMIC INVITED LECTURES

University of Illinois Chicago, School of Business (2018)

University of Texas Austin, McCombs School of Business (2018)

University of North Carolina, Kenan-Flagler School of Business (2016)

University of South Florida, Industrial Engineering (2015)

Pennsylvania State University, Industrial Engineering (2014)

London Imperial College, School of Computing (2014)

Hong Kong University, Department of Industrial Engineering (2014)

Carnegie Mellon University, Tepper School of Business (2013)

MISCELLANEOUS

Expert programmer in Python, Scala, Javascript, C++

Enjoy playing sports: running, swimming, skiing, biking

Blog: dynresmanagement.com/blog.html

Github: <https://github.com/wxC3SC6OPm8M1HXboMy>