

Konstantin Bauman, Ph.D.

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Current Position

Fox School of Business, Temple University, Philadelphia, PA **2017 – present**
Department of Management Information Systems
Assistant Professor

Research Interests

Machine learning, data and text mining, recommender systems, technology enhanced learning.

Education

NYU Leonard N. Stern School of Business, New York, NY **2013 – 2017**
Department of Information, Operations and Management Sciences
Postdoctoral Research Scientist

Ph.D. in Mathematics (Geometry and Topology) **2012**
Department of Mathematics,
Moscow State University, Russia
Thesis: “Square-to-linear ratio of regular Peano curves.”

M.S. in Machine Learning **2009**
Joint program between Moscow Institute of Physics and Technology and
Yandex School of Data Analysis, Russia

M.S. in Mathematics **2008**
Department of Mathematics,
Moscow State University, Russia

Professional Experience

Yandex, Moscow, Russia
Head of the Human Machine Learning Group **2011 – 2013**
Software Engineer **2008 – 2011**

Russian Academy of Foreign Trade, Moscow, Russia **2007 – 2008**
Software Engineer

Rutgers University, DIMACS, Piscataway, NJ **Sept 2007**
Visiting Researcher; worked on the Graph Visibility project.

Teaching Experience

MIS Department, Fox School of Business, Temple University

- Instructor for “*Web Application Development*” 20 students **Spring 2021**
Mentor in Diamond Peer Teachers Program - Anh Huynh
- Instructor for “*Data: Care, Feeding & Cleaning*” 38 students **Fall 2020**
- Instructor for “*Web Application Development*” 22 students **Fall 2020**
Mentor in Diamond Peer Teachers Program - Grace Kim
- Instructor for “*Data Centric Application Development*” 35 students **Spring 2020**
Mentor in Diamond Peer Teachers Program - Amy Nguyen
- Instructor for “*Data: Care, Feeding & Cleaning*” 25 students **Fall 2019**
- Instructor for “*Data Centric Application Development*” 35 students **Fall 2019**
- Instructor for “*Data Centric Application Development*” 34 students **Spring 2019**
- Instructor for “*Data: Care, Feeding & Cleaning*” 55 students **Fall 2018**
- Instructor for “*Data Centric Application Development*” 35 students **Fall 2018**
- Instructor for “*Data: Care, Feeding & Cleaning*” 42 students **Spring 2018**
- Instructor for “*Data Centric Application Development*” 34 students **Spring 2018**
- Instructor for “*Data Centric Application Development*” 36 students **Fall 2017**

IOMS Department, Stern School of Business, NYU

- Instructor for “*Dealing with Data*”: the MBA-level database course **Spring 2017**
- Instructor for “*Dealing with Data*”: the undergraduate database course **Spring 2015**

University Service

MIS Department, Fox School of Business, Temple University

- Appointed to the Data Science Institute **2017-present**
- MIS Awards coordination **2018-present**
- Team Lead for MIS2402 (Data Centric Application Development) Curriculum Redesign **2018**
- Member of MIS3502 (Application Integration and Evaluation) Curriculum Redesign group **2018**

Publications

Journal Publications

Information Systems

- Bauman K., Tuzhilin A. “Recommending Remedial Learning Materials to the Students by Filling their Knowledge Gaps”, **Management Information Systems Quarterly (MISQ)** 42, 1, pp 313–332, 2018
- Bauman K., Tuzhilin A., Zaczynski R. “Using Social Sensors for Detecting Emergency Events: A Case of Power Outages in the Electrical Utility Industry,” **ACM Transactions on Management Information Systems (TMIS) - WITS Special Issue**, 8, 2-3, pp 1–20, 2017.

Mathematics and Computer Science

- Bauman K. “Lower estimate of the square-to-linear ratio for regular Peano curves,” *Discrete Mathematics and Applications*, vol 24 (3), pp 123–128, 2014.
- Bauman K., Kornetova A., Topinskii V., Khakimova D. “Optimization of Click-through Rate Prediction in the Yandex Search Engine,” *Automatic Documentation and Mathematical Linguistics*, 47 (2), 52–58, 2013.
- Bauman K. “One-side Peano Curves Fractal Genius 9,” *Proceedings of the Steklov Institute of Mathematics, Russian Academy of Sciences*, vol 275 (1), pp 47–59, 2011.
- Bauman K., Shchepin E. “Minimal Peano Curve,” *Proceedings of the Steklov Institute of Mathematics, Russian Academy of Sciences*, vol 263 (1), pp 236–256, 2008.
- Bauman K. “The Dilation Factor of the Peano-Hilbert Curve,” *Mathematical Notes*, 80 (5), 609-620, 2006.

Book Chapters

- Bauman E., Bauman K. (2019) “Discovering the Graph Structure in Clustering Results.” In: Arai K., Kapoor S., Bhatia R. (eds) *Advances in Information and Communication Networks. FICC 2018. Advances in Intelligent Systems and Computing*, vol 886. Springer, Cham
- Bauman E., Bauman K. (2018) “One-Class Semi-supervised Learning.” In: Rozonoer L., Mirkin B., Muchnik I. (eds) *Braverman Readings in Machine Learning. Key Ideas from Inception to Current State. Lecture Notes in Computer Science*, vol 11100. Springer, Cham

Conference and Workshop Publications

Information Systems

- “Crowdfunding Project Uncertainty Prediction: An Attention based Multi-Label Text-CNN Approach,” (with G. Shan and S. Wattal), *Workshop on Information Systems and Economics (WISE)*, online, 2020
- “Supporting Students in the Peer-Review Process by Recommending Features of Written Feedback that Should be Improved,” (with R. Rietsche and M. Soellner), *Workshop on Information Technologies and Systems (WITS)*, online, 2020
- “Student Depression Detection: An Attention-based Bi-LSTM Approach Using Online and Offline Behavior Data,” (with G. Shan and Z. Deng), *Workshop on Information Technologies and Systems (WITS)*, online, 2020
- “Anchoring-Aware Matrix Factorization,” (with T. Triantoro), *INFORMS Workshop on Data Science*, online, 2020
- “Uncertainty Prediction for Crowdfunding Projects: A Multi-Label Attention based Text-CNN Approach,” (with G. Shan and S. Wattal), *INFORMS Workshop on Data Science*, online, 2020
- “Anchoring-Aware Recommendation Model,” (with T. Triantoro), *Statistical Challenges in Electronic Commerce Research (SCECR)*, Madrid, 2020
- “Anchoring Effects and User Personality Traits in Recommender Systems,” (with T. Triantoro), *Statistical Challenges in Electronic Commerce Research (SCECR)*, Hong Kong, 2019
- “How Would you Rate it? Anchoring Effects and User Personality Traits in Recommender Systems,” (with T. Triantoro), *Workshop on Information Technologies and Systems (WITS)*, Santa Clara, CA, USA, 2018
- “Aspect Based Recommendations: Recommending Items with the Most Valuable Aspects Based on User Reviews,” (with A. Tuzhilin, B. Liu), *In Proceedings of KDD 17*, Halifax, NS, Canada, 2017, 9 pages

- “Recommending Items with Conditions Enhancing User Experiences Based on Sentiment Analysis of Reviews,” (with A. Tuzhilin, B. Liu), *Workshop on Information Technologies and Systems (WITS)*, Dublin, Ireland, 2016
- “Discovering Contextual Information from User Reviews for Recommendation Purposes,” (with Tuzhilin A.), *Conference on Information Systems and Technology (CIST)*, Nashville, TN, 2016
- “Recommending Items with Conditions Enhancing User Experiences Based on Sentiment Analysis of Reviews” (with Liu B., Tuzhilin A.) *Content-based Recommender Systems (CBRecSys)*, Boston, 2016
- “Recommending Remedial Learning Materials to the Students by Filling their Knowledge Gaps,” (with Tuzhilin A.), *Workshop on Educational Recommender Systems (EdRecSys)*, Omaha, NE, 2016.
- “Using Social Sensors for Detecting Power Outages in the Electrical Utility Industry,” (with Tuzhilin A., Zaczynski R.), *Workshop on Information Technologies and Systems (WITS)*, Dallas, TX, 2015
- “Estimating customer reviews in recommender systems using sentiment analysis methods,” (with Liu B., Tuzhilin A.), *Conference on Information Systems and Technology (CIST)*, Philadelphia, PA, 2015
- “Discovering Contextual Information from User Reviews for Recommendation Purposes,” (with Tuzhilin A.), *New Trends in Content-based Recommender Systems (CBRecSys)*, Foster City, CA, 2014.
- “Recommending Learning Materials to Students by Identifying their Knowledge Gaps,” (with Tuzhilin A.), *Recommender Systems conference (RecSys)*, Poster, Foster City, CA, 2014.

Mathematics and Computer Science

- “Clustering Sequence of Micro-blog Messages and Study of its Applicability for Detecting New Events,” (with Suvorikova A.), *Intellectualization of Information Processing*, Budva, Montenegro, 2012.
- “In Search of Minimal Peano Curve,” *Topology, Geometry and Dynamics: Rokhlin Memorial Conference*, Saint Petersburg, Russia, 2010.
- “CTR Prediction Based on Click Statistics,” (with Kornetova A., Topinskii V.), *Machine Learning in Online Advertising (MLOAd)*, Vancouver, Canada, 2010.
- “Minimal Peano Curve,” *24th Conference on Topology and its Applications*, Brno, Czech Republic, 2009.
- “Central-Symmetric Polytopes with Minimum Number of Faces,” *International seminar “Discrete Mathematics and It’s Applications,”* Moscow, Russia, 2007.

Working Papers

- “Parsing Contextual Information from User Reviews for Recommendation Purposes” with Tuzhilin A.
- “Anchoring Effects and User Personality Traits in Recommender Systems” with Triantoro T.
- “Understanding and Measuring Feedback Quality” with Rietsche R.

Invited Talks

- “How Would you Rate it? Anchoring Effects and User Personality Traits in Recommender Systems,” - Simon Business School, University of Rochester, May 10, 2019.
- “Guiding Employees with Recommendations,” - Conference on Digitalization of Human Resources, Wharton School of the University of Pennsylvania, Philadelphia, PA, September 2018.
- “Educational Recommendations,” - 2018 Annual ISOM Research Workshop, University of Florida, Warrington College of Business, Gainesville, FL, February 2018.

- Fox School of Business, Temple University, February 2017.
- Warrington College of Business, University of Florida, January 2017.
- Simon Business School, University of Rochester, January 2017.
- Cox School of Business, Southern Methodist University, January 2017.
- Carlson School of Management, University of Minnesota, January 2017.
- Stevens Institute of Technology, November 2016.
- “Recommendations in on-line Education,” 1-hour invited talk at the Workshop on Educational Recommender Systems (EdRecSys), Omaha, NE, October 2016.

Honors and Grants

- 21st Young Scholars Interdisciplinary Forum, Fox, Temple - \$2,500 **2020**
- 19th Young Scholars Interdisciplinary Forum, Fox, Temple - \$1,500 **2019**
- 18th Young Scholars Interdisciplinary Forum, Fox, Temple - \$1,000 **2019**
- 16th Young Scholars Interdisciplinary Forum, Fox, Temple - \$1,000 **2018**
- NYC ASCENT Travel award for attending RecSys conference - \$2,700 **2016**
- NYC ASCENT Travel award for attending ICML conference - \$2,000 **2016**
- Research grant from Russian Foundation for Basic Research
“Mathematics for computing systems of ultra-high performance” **2012**
- Research grant from Russian Foundation for Basic Research
“Geometrical, Topological, and Combinatorial Methods for Constructing and Analyzing Complex Structures by Supercomputers” **2011**
- Research grant from Russian Foundation for Basic Research
“Algebraic and Combinatorial Methods of Mathematical Cybernetics” **2008**
- Gold medal in Mathematics from the Russian Academy of Science
for the work “The Dilation Factor of the Peano-Hilbert Curve” **2007**
- First place in the International Science and Engineering Fair, (ISEF), Moscow, Russia
for the work “The Estimation of Square-to-Linear Ratio of the Peano Curve” **2003**
- First place in the International Science Conference “Kolmogorov readings” , Moscow, Russia
for the work “Square-to-Linear Ratio of the Peano Curve” **2003**

Professional Service

Conference Organization

- Publicity co-chair for the Workshop on Information Technologies and Systems (WITS), 2021
- Organizer of the “Workshop on Context-Aware Recommender Systems” with the 14th ACM Conference on Recommender Systems, 2020
- Organizer of the “Workshop on Context-Aware Recommender Systems” with the 13th ACM Conference on Recommender Systems, 2019
- Chair of the “Recommender Systems Session” within Information Systems Track at the INFORMS Annual Meeting 2017

Program Committee Member

- 2020 INFORMS Workshop on Data Science
- Conference on Information Systems and Technology 2020
- The 14th ACM Conference on Recommender Systems (RecSys) 2020
- The 13th ACM Conference on Recommender Systems (RecSys) 2019
- Associate Editor for the track "Mobile, IoT and Ubiquitous Computing", International Conference on Information Systems (ICIS) 2019
- The 12th ACM Conference on Recommender Systems (RecSys) 2018
- Workshop on Intelligent Recommender Systems by Knowledge Transfer & Learning (RecSysKTL) 2018
- The 11th ACM Conference on Recommender Systems (RecSys) 2017
- Track on Recommender Systems at the 32nd ACM Symposium on Applied Computing (SAC) 2017
- Track on Recommender Systems at the 30th International Florida Artificial Intelligence Research Society (FLAIRS) Conference 2017

*Reviewer***Journals**

- Management Science
- Information Systems Research (ISR)
- Management Information Systems Quarterly (MISQ)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ACM Transactions on Knowledge Discovery and Data (TKDD)
- ACM Transactions on Management Information Systems (TMIS)
- ACM Transactions on the Web (TWEB)
- IEEE Transactions on Big Data
- User Modeling and User-Adapted Interaction (Springer)
- Journal of Systems and Information Technology

Conferences

- International Conference on Information Systems (ICIS) 2017
- ACM Transactions on Information Systems (TOIS)
- Pervasive and Mobile Computing Journal (PMC)
- The ACM Conference on Recommender Systems (RecSys) 2016
- Neural Information Processing Systems (NIPS) 2016
- Workshop on Information Technology and Systems (WITS) 2016

Website administrator

- ACM Transactions on Management Information Systems (TMIS)

Professional Memberships

- INFORMS, Association for Computing Machinery (ACM), NYC ASCENT

Professional Certificates

- Essentials of Project Management, Project Management Institute, 2015
- Managing Multiple Projects, Project Management Institute, 2016
- Fundamentals of Teaching, NYU School of Medicine, 2015

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