

ARTEM TIMOSHENKO

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EDUCATION

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| 2014 - present | Massachusetts Institute of Technology, Cambridge, MA, USA Ph.D., Quantitative Marketing |
| 2012 – 2014 | New Economic School, Moscow, Russia M.A., Economics |
| 2008 – 2013 | Lomonosov Moscow State University, Moscow, Russia Diploma, Applied Mathematics and Computer Science |

RESEARCH INTERESTS

Quantitative Marketing, Machine Learning, Industrial Organization, Economics of Digitization

WORKING PAPERS

Artem Timoshenko and John R. Hauser (2017), "Identifying Customer Needs from User-Generated Content," Under Review, *Marketing Science*

Winner, ISMS Doctoral Dissertation Proposal Award 2016

Duncan Simester, Artem Timoshenko, and Spyros I. Zoumpoulis (2016), "Customizing Marketing Decisions Using Field Experiments," Revise & Resubmit, *Management Science*

WORK IN PROGRESS

"Using Responders to Target Non-Responders," with Theodoros Evgeniou, Duncan Simester, and Spyros I. Zoumpoulis

"Efficiently Evaluating Targeting Policies Using Field Experiments," with Duncan Simester and Spyros I. Zoumpoulis

"Optimal Product Design with Deep Learned Visual Features," with Liu Liu

PAPERS IN PROCEEDINGS

Artem Timoshenko and John R. Hauser (2016), "Mining and Organizing User-Generated Content to Identify Attributes and Attribute Levels," forthcoming, *Proceedings of the Sawtooth Software Conference*, Park City, Utah, September 28-30, 2016

CONFERENCE PRESENTATIONS

INFORMS Marketing Science Conference, Los Angeles, CA, 2017
Sawtooth Software Conference, Park City, UT, 2016

AWARDS, FELLOWSHIPS AND GRANTS

Marketing Science Doctoral Consortium Fellow, 2017
INFORMS Society for Marketing Science (ISMS) Doctoral Dissertation Proposal Award, 2016
Graduate Fellowship, Massachusetts Institute of Technology, 2014-2019
Graduate Fellowship, New Economic School, 2012-2014
Best Undergraduate Research Paper Award, Lomonosov Moscow State University, 2013
Honorable Mention Karl Menger Memorial Award, American Mathematical Society, 2008
Russian National Mathematics Olympiad, Regional Stage Winner, 2008
Russian National Physics Olympiad, Regional Stage Winner, 2008

TEACHING EXPERIENCE

Teaching Assistant, MIT Sloan School of Management, Cambridge, MA, USA

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| Marketing and Strategy (EMBA) | Duncan Simester | Summer 2015 - 2017 |
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Teaching Assistant, INSEAD Executive Education Program, Moscow, Russia

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| Marketing Management | Yakov Bart | 2013-2014 |
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SELECTED RESEARCH ABSTRACTS

Identifying Customer Needs from User-Generated Content

Joint with John R. Hauser (Under Review)

Identifying customer needs is important to marketing strategy, product development, and marketing research. User-generated content (UGC) provides an opportunity to better identify customer needs for managerial impact. However, established methods are neither efficient nor effective for large UGC corpora because much content is non-informative and repetitive. We propose a machine-learning approach to select content for efficient review. We use a convolutional neural network to filter out non-informative content and cluster dense sentence embeddings to avoid sampling repetitive content. We further address two key questions: Are customer needs identified in UGC comparable to customer needs identified with standard methods? Do the machine-learning methods improve customer-need identification? These

comparisons are enabled by a custom data set of customer needs for oral care products identified by professional analysts using industry-standard experiential interviews. The same professional analysts coded 12,000 UGC sentences to identify if each sentence contained one or more previously identified customer needs and/or new customer needs. Results: Customer needs identified from UGC are at least as valuable for product development, likely more-valuable, than those identified by conventional methods and (2) machine-learning methods improve efficiency (unique customer needs identified per unit of professional services cost).

Customizing Marketing Decisions Using Field Experiments

Joint with Duncan Simester and Spyros Zoumpoulis (Revise and Resubmit)

We investigate how firms can use the results of field experiments to optimize the targeting of promotions. We evaluate seven widely-used segmentation methods using a series of two large scale field experiments. The first field experiment is used to generate a common pool of training data for each of the seven methods. We then validate the seven optimized policies provided by each method together with uniform benchmark policies in a second field experiment. We explain the relative performance of the methods in our setting using a series of simulations.

PH.D. COURSEWORK

| | | |
|--------|--|-------------------------------------|
| 14.271 | Industrial Organization I | Glen Ellison |
| 14.272 | Industrial Organization II | Michael Whinston |
| 14.273 | Advanced Topics in Industrial Organization | Nikhil Agarwal |
| 14.282 | Organizational Economics | Heikki Rantakari, Michael Whinston |
| 14.382 | Econometrics | Victor Chernozhukov |
| 14.387 | Applied Econometrics | Joshua Angrist, Victor Chernozhukov |
| 6.867 | Machine Learning | Leslie Kaelbling, Jacob White |
| 6.864 | Advanced Natural Language Processing | Regina Barzilay, Tommi Jaakkola |
| 6.437 | Inference and Information | Stefanie Jegelka, Gregory Wornell |
| 6.438 | Algorithms for Inference | Gregory Wornell |
| 6.231 | Dynamic Programming and Stochastic Control | Dimitri P Bertsekas |
| 15.840 | PhD Seminar in Experimental Design | Dean Eckles |
| 15.840 | PhD Seminar in Marketing Strategy | T. Tony Ke |
| 15.840 | PhD Seminar in Consumer Behavior | Drazen Prelec |
| 15.840 | PhD Seminar in Social Influence | Juanjuan Zhang |
| 15.840 | PhD Seminar in Marketing Research | John R. Hauser, Birger Wernerfelt |

REFERENCES

John R. Hauser

Kirin Professor of Marketing
MIT Sloan School of Management
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Duncan Simester

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MIT Sloan School of Management
simester@mit.edu