

Nikolay Archak

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Education

Ph.D., Information Systems, New York University, 2006 - 2011 (expected)

M.Phil., Information Systems, New York University, 2006 - January 2009, *GPA 4.0/4.0*

Eng. Diploma, Math/Computer Science, St.Petersburg State University, Russia, 1997 - 2002, *cum laude, GPA 5.0/5.0*

Research Interests

Game Theory, Auction Theory, Electronic Markets, Financial Markets, Machine Learning

Selected Publications

N. Archak, A. Ghose, and P. Ipeirotis, "Deriving the Pricing Power of Product Features by Mining Consumer Reviews", *Management Science*, forthcoming

N. Archak, A.Ghose, "Learning-By-Doing and Project Choice: a Dynamic Structural Model of Crowdsourcing", *Proceedings of the Fourteenth International Conference on Information Systems (ICIS 2010)*, 2010

N. Archak, "Money, glory and cheap talk: analyzing strategic behavior of contestants in simultaneous crowdsourcing contests on TopCoder.com", *Proceedings of the Nineteenth International World Wide Web Conference (WWW 2010)*, 2010

N. Archak, V. Mirrokni, and S.Muthukrishnan, "Mining Advertiser-specific User Behavior Using Adfactors", *Proceedings of the Nineteenth International World Wide Web Conference (WWW 2010)*, 2010

N. Archak, A. Sundararajan, "Optimal Design of Crowdsourcing Contests", *Proceedings of the Thirtieth International Conference on Information Systems (ICIS 2009)*, 2009

N. Archak, P. Ipeirotis, "Modeling Volatility in Prediction Markets", *Proceedings of the Tenth ACM SIGE-COM International Conference on Electronic Commerce (EC 2009)*, 2009

N. Archak, A. Ghose, and P. Ipeirotis, "Show me the money! Deriving the Pricing Power of Product Features by Mining Consumer Reviews", *Proceedings of the Thirteenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2007)*, 2007 (< 20% accepted)

Work In Progress

N. Archak, "Information Asymmetries and Reputation in Crowdsourcing Markets, a Case Study of Top-Coder.com"

N. Archak and A. Sundararajan, "The Crowdsourcer's Dilemma: Design and Efficiency of All-pay Contests with Incomplete Information"

N. Archak and A. Ghose, "Learning-By-Doing and Project Choice: Evidence from the Crowdsourcing Industry"

N. Archak, V. Mirrokni, and S.Muthukrishnan, "Constrained Markov Decision Processes for Budget Optimization in Search-based Advertising Auctions"

Selected Conference Presentations

Marketing Dynamics Conference 2010, "Learning-By-Doing and Project Choice: Evidence from Crowdsourcing Industry", Istanbul, June 2010

ICIS 2009, "Optimal Design of Crowdsourcing Contests", Phoenix, AZ, December 2009

ACM EC 2009, "Modeling Volatility in Prediction Markets", Palo Alto, CA, July 2009

The 2009 North American Summer Meeting of the Econometric Society, "The Crowdsourcer's Dilemma: Design and Efficiency of All-pay Contests with Incomplete Information", Boston University, Boston, June 2009

The 7th Annual International Industrial Organization Conference, "The Crowdsourcer's Dilemma: Design and Efficiency of All-pay Contests with Incomplete Information", Northeastern University, Boston, April 2009

Winter Conference on Business Intelligence, University of Utah, "The Crowdsourcer's Dilemma: Design and Efficiency of All-pay Contests with Incomplete Information", March 2009

Statistical Challenges in Electronic Commerce Research, "Deriving the Pricing Power of Product Features by Mining Consumer Reviews", New York, May 2008

ACM SIGKDD 2007, "Show me the money! Deriving the Pricing Power of Product Features by Mining Consumer Reviews", San Jose, CA, August 2007

Winter Conference on Business Intelligence, University of Utah, "Towards Automating the Pricing Power of Product Attributes: An Analysis of Online Product Reviews", February 2007

Honors and Awards

2010 Yahoo! Key Scientific Challenges Award, \$5,000 unrestricted research grant

2009 TopCoder Open Software Design **2nd Place**, \$5,000 Prize

2007 TopCoder Collegiate Challenge Software Design **Champion**, \$25,000 Prize

2007 TopCoder Collegiate Challenge Algorithm Semifinalist

2007 TopCoder Open Algorithm Semifinalist

2006 TopCoder Collegiate Challenge Software Design **Champion**, \$25,000 Prize

2006 TopCoder Collegiate Challenge Algorithm Semifinalist

2006 Global Google Code Jam Finalist

2006 Google Code Jam Europe Finalist

2006 TopCoder Open Software Design **2nd Place**, \$10,000 Prize

2006 TopCoder Open Algorithm Semifinalist

2005 TopCoder Coder of The Month (November)

2005 TopCoder Open Software Design **Champion**, \$20,000 Prize

2005 Global Google Code Jam Finalist

2005 TopCoder Open Algorithm Finalist

2004 TopCoder Open Algorithm Quarter Finalist

Fellowships

NYU Stern Doctoral Fellowship, 2006 - 2010

Professional Service

Ad-hoc Journal Referee: Management Science, Marketing Science

External Conference Reviewer: VLDB(Very Large Databases), ACM SIGMOD (Special Interest Group on Management of Data), ICIS (International Conference on Information Systems), PACIS (Pacific Asian Conference on Information Systems), WWW (International World Wide Web Conference)

Software Design Review Board Member: TopCoder (Served as a design reviewer for more than 50 software projects).

Teaching Experience

Instructor, Statistics for Business Control (undegraduate), NYU Stern, Spring 2010

Teaching Assistant, Financial Theory IV (PhD), NYU Stern, Spring 2009

Teaching Assistant, Search and the New Economy (MBA), NYU Stern, Winter 2008

Teaching Assistant, Search and the New Economy (MBA), NYU Stern, Spring 2008

Teaching Assistant, Microeconomics: Theory and Applications (PhD), NYU Stern, Fall 2008

Patents

“Mining Advertiser-specific User Behavior Using Adfactors”, US Patent (61/257,393) approved.

“Budget Optimization for Online Advertising Campaigns with Carryover Effects”, US Patent (12/917,936) pending.

Work Experience

Two Sigma Investments New York, NY
Quantitative Research Analyst/Trader May 2010 - now
Pursued research and development of high-frequency trading strategies for a variety of futures instruments. Successfully deployed a number of trading strategies currently in production.

Google Research New York, NY
Winter Intern Winter 2009
Building scalable statistical models for the analysis of advertising data.

Google Research New York, NY
Summer Intern Summer 2009
Building scalable statistical models for the analysis of advertising data (US patent pending).

D.E.Shaw & Co., L.P. New York, NY
Summer Intern Summer 2008
Research and development of software for the proprietary trading system.

TopCoder Saint-Petersburg, Russia
Software Designer/Review Board Member 2005
UML based design of .NET and Java software components for different applications.

Samsung Electronics, Telecom. Division Suwon, South Korea
Assistant Manager 2003–2005
Research and development of software for GPS-enabled car navigation systems.

OKTET Ltd. Saint-Petersburg, Russia
Software Engineer 1999-2002
Development of real-time software for networks and telecommunications.