

September 2019

W. Jason Choi

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EDUCATION

Columbia University, New York, NY

Ph.D., Marketing, Graduate School of Business Expected 2020
M.S., Operations Research, School of Engineering & Applied Science 2014

Korea Advanced Institute of Science & Technology, Daejeon, Republic of Korea

B.S., Mathematics, College of Natural Sciences, *Magna Cum Laude* 2012

RESEARCH INTERESTS

- Competitive marketing strategy
- Digital marketing
- Data privacy

PUBLICATIONS

Learning in Online Advertising (*with Amin Sayedi*), **Marketing Science** (2019)

WORKING PAPERS

Customer Purchase Journey, Privacy & Advertising Strategies (*with Kinshuk Jerath, Miklos Sarvary*)
Job Market Paper

Persuasive Advertising in a Vertically Differentiated Market (*with Kinshuk Jerath, Miklos Sarvary*)
Reject & Resubmit at **Journal of Marketing Research**

RESEARCH IN PROGRESS

Price Commitment Under Uncertainty (*with Kinshuk Jerath, Miklos Sarvary*)

Competitive Keyword Management (*with Upendar Subramanian*)

CONFERENCE PRESENTATIONS

12th Workshop on the Economics of Advertising & Marketing, Porto, Portugal 2019
Customer Purchase Journey, Privacy & Advertising Strategies

Summer Institute in Competitive Strategy, Berkeley, CA 2018
Learning in Online Advertising

Marketing Dynamics Conference, Dallas, TX 2018
Learning in Online Advertising

Behavioral Industrial Organization & Marketing Symposium, Ann Arbor, MI Persuasive Advertising in a Vertically Differentiated Market	2018
UT Dallas Frontiers of Research in Marketing Science Conference, Richardson, TX Learning in Online Advertising	2018
Conference on Digital, Mobile Marketing & Social Media Analytics, New York, NY Learning in Online Advertising	2017
Marketing Science, Los Angeles, CA Persuasive Advertising in a Vertically Differentiated Market	2017

HONORS & GRANTS

36 th University of Houston Doctoral Symposium, Department Representative	2018
Paul & Sandra Montrone Doctoral Fellowship	2015 – 2016
Amanda & Harold J. Rudolph Fellowship	2014 – 2015
Columbia Business School Ph.D. Research Fellowship	2014 – 2019
Korea Science & Engineering Foundation Scholarship	2006 – 2012

TEACHING EXPERIENCE

Teaching Assistant, Columbia Business School

Digital Marketing, MBA, Spring 2019	Kinshuk Jerath
Analytical Models, PhD, Fall 2018	Kinshuk Jerath
Marketing, MBA Core, Fall 2018	Olivier Toubia
Media Platforms & Content, MBA, Spring 2018	Miklos Sarvary
Managerial Economics, EMBA Core, Fall 2017, Fall 2018	Andrea Prat
Advanced Excel Workshop, MBA, Fall 2016, Spring 2017	Zhe Liu
Applied Multivariate Statistics, PhD, Summer 2016	Kamel Jedidi
Marketing of Luxury Products, MBA, Spring 2015	Ketty Maisonrouge

WORK EXPERIENCE

Anda Asset Management , Seoul, Republic of Korea Intern, Pairs Trading	Oct 2011 – Jan 2012
Republic of Korea Army , Dongducheon, Republic of Korea Sergeant, Korean Augmentation to the U.S. Army	Dec 2009 – Oct 2011
JPMorgan Chase & Co. , Seoul, Republic of Korea Intern, Rates Marketing	Jun 2008 – Aug 2008

DOCTORAL COURSEWORK

Marketing

Analytical Models	Kinshuk Jerath
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Bayesian Modeling	Asim Ansari
Bridging Behavioral Decision Making	Ran Kivetz
Consumer Behavior I	Michel Pham
Consumer Behavior II	Eric Johnson
Empirical Models I	Asim Ansari
Marketing, Decisions & Methods	Donald Lehmann
Mathematical Models in Marketing	Rajeev Kohli

Economics

Economic Analysis I & II	Geoffrey Heal
Economic Analysis III & IV	Paolo Siconolfi
Industrial Organization (NYU)	Luís Cabral
Industrial Organization I	Andrea Prat
Introduction to Econometrics I	Jushan Bai
Introduction to Econometrics II	Christoph Rothe
Organizational Economics	Charles Angelucci
Topics in Game Theory for Operations	Jacob Leshno

Operations, Statistics & Other

Applied Multivariate Statistics	Kamel Jedidi
Computing for Business Research	Mark Broadie
Empirical Methods I	Marcelo Olivares
Foundations of Graphical Models	David Blei
Foundations of Optimization	Jacob Leshno
Machine Learning	Dan Hsu
Optimization I	Vineet Goyal
Research Methods	Eric Abrahamson
Stochastic Modeling I	Ward Whitt

OTHER

Programming

C++, Python, R, Java, Matlab, Mathematica

Citizenship

Republic of Korea (U.S. Permanent Resident)

REFERENCES

Kinshuk Jerath

Associate Professor of Marketing
Columbia University
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Miklos Sarvary

Carson Family Professor of Business
Columbia University
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Amin Sayedi

Associate Professor of Marketing
University of Washington
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Customer Purchase Journey, Privacy & Advertising Strategies (with Kinshuk Jerath, Miklos Sarvary)

We investigate the impact on the online advertising ecosystem of tracking consumers' activities on the Internet. We also study the impact of regulations that, motivated by privacy concerns, endow consumers with the choice to have their online activity be tracked or not (e.g., the General Data Protection Regulation passed by the European Union in 2018). The consumers' strategic decisions to (dis)allow advertisers from tracking their activity depend on two aspects of privacy: its intrinsic value (protect privacy for its own sake) and its instrumental value (compromise privacy if doing so indirectly leads to some utility-enhancing outcome). This opt-in decision impacts the precision of inferences by advertisers about how far down a consumer is in the "purchase funnel" for a product by virtue of ads shown previously. The structure of the purchase funnel creates an interdependence between the effectiveness of the sequence of ads shown, which in turn affects advertising strategies. For instance, we find that the intensity of advertising by advertisers is non-monotonic in the effectiveness of ads. Consequently, consumers may opt-in to be tracked when ad effectiveness is intermediate. While privacy regulations generally increase consumer surplus, the implications for the ad network are mixed. Interestingly, the ad network's profit may (i) be higher under endogenous tracking than under full tracking, and (ii) decrease as ads become more effective. We discuss managerial implications for advertisers as well as policy implications for regulators.

Learning in Online Advertising (with Amin Sayedi)

Prior literature on pay-per-click advertising assumes that publishers know advertisers' click-through rates, the probability that a consumer clicks on an advertiser's ad. This information, however, is not available when a new advertiser starts advertising for the first time. In particular, a new advertiser's click-through rate can be learned only if the advertiser's ad is shown to enough consumers, i.e., the advertiser wins enough auctions. Since, in pay-per-click auctions, publishers use advertisers' expected click-through rates when calculating payments and allocations, the lack of information about a new advertiser can affect new and existing advertisers' bidding strategies. In this paper, we use a game theory model to analyze advertisers' strategies, their payoffs, and the publisher's revenue when a new advertiser joins the market. Our results indicate that a new advertiser should always bid higher (sometimes above its valuation) when it starts advertising. However, the strategy of an existing advertiser, i.e., an incumbent, depends on its valuation and click-through rate. A strong incumbent increases its bid to prevent the publisher from learning the new advertiser's click-through rate, whereas a weak incumbent decreases its bid to facilitate the learning process. Interestingly, we find that, under certain conditions, the publisher benefits from not knowing the new advertiser's click-through rate because its ignorance could induce the advertisers to bid more aggressively. Nonetheless, the publisher's revenue sometimes decreases because of this lack of information, particularly, when the incumbent is sufficiently strong. We show that the publisher can mitigate this loss, and improve its total profit, by lowering the reserve price of, offering free advertising credit to, or boosting the bids of new advertisers.

Persuasive Advertising in a Vertically Differentiated Market (with Kinshuk Jerath, Miklos Sarvary)

We study a scenario in which firms offering products of different qualities can use persuasive advertising to influence consumers' preferences and perceptions about product quality. Consumers have an absolute and a relative component of utility from quality, and derive diminishing marginal utility of quality (e.g., due to loss aversion from qualities below a reference point). We consider two types of effects of ads – influencing a consumer's valuation of quality relative to price (valuation shifting) and influencing a consumer's reference point against which she evaluates quality (reference shifting). We find that a monopolist only uses ads that increase total utility from a product. However, competing firms may use ads that reduce total utility from a product – even their own product (e.g., by making the quality reference point higher) – because they may increase the utility of their offering in comparison with the competing offering, thus placing them in a favorable competitive position. We also find that the faster the marginal utility from quality diminishes, the greater preference firms have for reference-shifting ads over valuation-shifting ads. Interestingly, perceived consumer surplus may decrease if products are less differentiated, even though this leads to higher pricing competition, because of shifts in advertising strategy.