Sol (Soheil) Sadeghi

CONTACT
INFORMATION

Microsoft
WDG Core Data Science
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Data Scientist II
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EDUCATION

University of Wisconsin-Madison, Madison, Wisconsin, USA   2013–2017

Department of Statistics

- Doctor of Philosophy, **Major**: Statistics, **Minor**: Computer Science, Final GPA: 3.8

University of Florida, Gainesville, Florida, USA   2011–2013

Department of Statistics

- Master of Statistics, Final GPA: 3.9

Sharif University of Technology, Tehran, Iran   2007–2011

Department of Industrial Engineering

- Bachelor of Science, Final GPA: 17.6/20.0; Class Rank: 2

RESEARCH

Sadeghi, S., Carey, J. (2017). **Phase-based Business Cyclic Patterns in Dynamic Linear Models**, submitted to *Microsoft Journal of Applied Research (MSJAR)*

Sadeghi, S., Qian, P.Z.G., and Arora, N. (2017). **Sliced Minimum Aberration Designs for Four-platform Experiments**, to be submitted to *Technometrics*

Sadeghi, S., Qian, P.Z.G., and Arora, N. (2016). **Sliced Designs for Multi-platform Online Experiments**, submitted to *Marketing Science*

Sadeghi, S., Arora, N., Qian, P.Z.G., Li, J. and Pavlidis, Y. (2015) **Scalable Assessment of Cross Category Promotion Effects Using Machine Learning**, working paper

Sadeghi, S. and Mahlooji, H. (2010). **A New Approach in Fitting Linear Regression Models with the Aim of Improving Accuracy and Power**, *Journal of Industrial and Systems Engineering (JISE)*, Volume 4, Number 2, pp. 95-113

INVITED TALKS

UCLA Department of Statistics (DAE 2017 Conference)

Design and analysis of online experiments   2017

UT-Dallas Naveen Jindal School of Management (Bass FORMS Conference)

How to statistically design for digital experiments?   2017

Stanford Graduate School of Business (Digital Marketing Conference)

Sliced designs for multi-platform online experiments   2016

Wisconsin School of Business

Cannibalization project with Sam's Club data   2016

Introduction to R and its role in Marketing research   2016

Machine learning applications in Marketing   2015

DISSERTATION

Sliced Designs for Multi-platform Online Experiments

Dissertation Committee:
Peter Qian, Neeraj Arora, Kam-Wah Tsui, Anru Zhang, Paul Hoban

Abstract:

Multivariate testing is a popular method to improve websites, mobile apps, and email campaigns. A unique aspect of testing in the online space is that it needs to be conducted across multiple platforms such as a desktop and a smartphone. The existing experimental design literature does not offer precise guidance for such a multi-platform context. In this paper, we introduce a multi-platform design framework that allows us to measure the effect of the design factors for each platform and the interaction effect of the design factors with platforms. Substantively, the resulting designs are of great importance for testing digital campaigns across platforms. We illustrate this in an empirical email application to maximize engagement for a digital magazine. We introduce a novel "sliced effect hierarchy principle" and develop design criteria to generate factorial designs for multi-platform experiments. To help construct such designs, we prove two theorems that connect the proposed designs to the well-known minimum aberration designs. We find that experimental versions made for one platform should be similar to other platforms. From the standpoint of real world application, such homogeneous sub-designs are cheaper to implement. To assist practitioners, we provide two algorithms to construct the designs that we propose. We also tabulate sliced factorial designs with 16, 32, and 64 runs for four-platform experiments.

OTHER PROJECTS

Data Division   2015

Optimal division of large and complex datasets into homogeneous batches and allocation to different servers in order to do parallel computing

Cannibalization and Halo Effect   2015

A probabilistic approach to Cannibalizations and Halo for modeling large and complex Sam's Club data

Search Engine Optimization   2014

Keyword optimization on a complex dataset from Google AdWords and designing experiments to fill empty spaces in order to improve conversion profitability

Testing and Optimization   2014–2015

Efficient statistical designs for A/B testing and multivariate testing while dealing with large number of potential factors across different platforms such as PC, tablet, and smartphone

Predictive Modeling   2014

Predictive response modeling effort in between two waves of mailings to QuickBooks customers with the aim of improving wave-two response rates and company profits

Ranking Algorithms   2013

Worked on a dataset from Expedia.com with the aim of learning from consumer behaviors in order to rank hotels across different queries using machine learning algorithms

HONORS AND
ACHIEVEMENTS

Research and Graduate Program Fellowship (Grinter Award) and **Outstanding Academic Achievement Certificate**, University of Florida, 2011–2013

Ranked **2nd** among **80** students in Department of Industrial Engineering, Sharif University of Technology, 2011

Ranked **311th** among more than **300,000** students in the nationwide University Admission Examination (**99** Percentile), 2007

SKILLS

Statistical Packages: R

Programming: Python

Graduate Coursework

- **Theoretical Statistics**

Course	Instructor	School
Graphical Models	Garvesh Raskutti	UW-Madison
Non-parametric Statistics	Chunming Zhang	UW-Madison
Mathematical Statistics	Yazhen Wang and Jun Shao	UW-Madison
Probability Theory	Andrew Rosalsky	UFlorida
Statistical Inference	Malay Ghosh	UFlorida
Markov Chain Monte Carlo	Hani Doss	UFlorida
Theory of Linear Models	Hani Doss	UFlorida
Theoretical Statistics	Kshitij Khare	UFlorida
Modern Analysis	Paul Robinson	UFlorida

- **Applied Statistics**

Course	Instructor	School
Statistical Model Building and Learning	Grace Wahba	UW-Madison
High Dimensional Statistical Inference	Ming Yuan	UW-Madison
Multivariate Analysis	Ming Yuan	UW-Madison
Network Skills for Statistics	Brian Yandell	UW-Madison
Generalized Linear Models	Brett Presnell	UFlorida
Regression Analysis	Larry Winner	UFlorida
Design of Experiments	Larry Winner	UFlorida

- **Computer Science**

Course	Instructor	School
Advanced Machine Learning	Jerry Zhu	UW-Madison
Database Management Systems	AnHai Doan	UW-Madison
Algorithms	Deborah Joseph	UW-Madison

Undergraduate Coursework

- **Industrial Engineering**

Course	Instructor	School
Simulation and Statistics	Hashem Mahlooji	Sharif UT
Queueing Theory and Probability Models	Mohammad Modarres Yazdi	Sharif UT
Regression Analysis	Seyed Taghi Akhavan Niaki	Sharif UT
Operations Research	Kourosh Eshghi	Sharif UT
Statistical Quality Control	Fereidoon Kianfar	Sharif UT
Probability and Applications	Rasoul Haji	Sharif UT
Engineering Statistics	Hashem Mahlooji	Sharif UT
Linear Algebra	Kourosh Eshghi	Sharif UT
Economics	Mohammad Hadi Chamran	Sharif UT
Principles of Marketing	Hassan Shavandi	Sharif UT
Basic Management	Hassan Shavandi	Sharif UT
Computer Information Systems	Hassan Shavandi	Sharif UT

TEACHING
EXPERIENCE

University of Wisconsin-Madison

4.7/5.0 with **90+** reviews on **ratemyprofessors.com**: www.ratemyprofessors.com/soheilsadeghi

- **Teaching Assistant** for Stat610, Introduction to Statistical Inference (size:50), **Eval: 4.8/5**   2017
- **Teaching Assistant** for Stat371, Introduction to Applied Statistics (size:150), **Eval: 4.71/5**   2013–2015
- **Teaching Assistant** for Stat311, Introduction to Math. Statistics (size:120), **Eval: 4.19/5**   2014
- **Teaching Assistant** for Stat301, Introduction to Statistical Methods (size:25), **Eval: 4.1/5**   2013–2014

University of Florida

- **Instructor** for STA3032, Engineering Statistics (size:70), **Eval: 4.0/5**   2013
- **Instructor** for STA3024, Introduction to Statistics II (size:250), **Eval: 3.3/5**   2013
- **Teaching Assistant** for STA2023, Introduction to Statistics I (size:50), **Eval: 3.2/5**   2011–2012

PROFESSIONAL
EXPERIENCE

Data Scientist Intern at **Microsoft**, worked on a productivity power metric: "Measuring and Analyzing Code-to-Customer Flow Time", summer 2016

Data Scientist Intern at **@Walmartlabs** (personalized offer team), worked on the cannibalization problem for Sam's Club data, summer 2015

Statistical Analyst/Intern at **Nail Iran Co.** (a Leading International Manufacturer of MERIC Lamps), worked on the Production Control Section as a statistical analyzer, summer 2010

Executive Manager of "KHABARNAMEH", a quarterly published by Department of Industrial Engineering, Sharif University of Technology, 2008-2009