# Soheil (Sol) Sadeghi

## EDUCATION

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

Doctor of Philosophy, **Major**: Statistics, **Minor**: Computer Science

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

Master of Statistics

**Sharif University of Technology**, Tehran, Iran 2007–2011

Bachelor of Science in Industrial Engineering

## PROFESSIONAL EXPERIENCE

**Data Scientist** at **Microsoft**, working primarily on projects related to Windows, 2017–current

**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

## DISSERTATION

**Sliced Designs for Multi-platform Online Experiments**

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

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.

## ACADEMIC TALKS

**Math Sciences at The University of Memphis (ICODOE 2019)**

Novelty and learning effects in online experiments 2019

**UCLA Department of Statistics (DAE 2017 Conference)**

Sliced designs for multi-platform online experiments 2017

**UT-Dallas Naveen Jindal School of Management (Bass FORMS Conference)**
Sliced designs for multi-platform online 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

## 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 with GPA 18.45/20 and awarded direct entrance to graduate program, Department of Industrial Engineering, Sharif University of Technology, 2010

**99** percentile in the nationwide University Admission Examination, 2007

COURSEWORK

## 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 |
| Probability Models | Seyed Taghi Akhavan Niaki | Sharif UT |
| Economics | Mohammad Hadi Chamran | Sharif UT |
| Principles of Marketing | Hassan Shavandi | Sharif UT |
| Basic Management | Hassan Shavandi | Sharif UT |
| Computer Information Systems | Naser Salmasi | Sharif UT |