

# SARA MOHAMMAD TAHERI

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College of Computer and Information Science

NORTHEASTERN UNIVERSITY, Boston MA

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## Research interests

- Causal inference of bio-molecular networks
- Statistical and machine-learning methods for quantitative mass spectrometry-based proteomics
- R-based computing for life sciences research

## Education

2016-      PhD candidate, Computer Science, NORTHEASTERN UNIVERSITY, USA

current    Advisor: O. Vitek

2014      MS, Mathematics, SHARIF UNIVERSITY OF TECHNOLOGY, Iran.

Thesis: “*On mixing time for some Markov Chain Monte Carlo*”

Advisor: K. Alishahi

2010      BS. in Mathematics, SHARIF UNIVERSITY OF TECHNOLOGY, Iran.

Diploma: “*Roman Domination in Graph Theory*”

Advisor: S. Akbari

## Experience

06/2018-    Internship. GNS HEALTHCARE COMPANY, USA.

09/2018      • Causal inference in networks inferred from bio-molecular measurements with technical variation.

09/2017-    Teaching assistant. NORTHEASTERN UNIVERSITY, USA.

11/2017      • MS course “Introduction to Data Management and Processing”. Grading, Office hours.

06/2017-    Internship. GNS HEALTHCARE COMPANY, USA.

09/2017      • Causal inference in networks inferred from bio-molecular measurements with technical variation.

01/2017-    Teaching assistant. NORTHEASTERN UNIVERSITY, USA.

04/2016      • MS course “Machine Learning”. Grading, Office hours.

- 09/2016-11/2016 Teaching assistant. NORTHEASTERN UNIVERSITY, USA.
- MS course “Collecting, Storing, and Retrieving Data”. Office hours.
  - MS course “Topics in Statistics and Data Analysis”. Grading, office hours.
- 02/2016-09/2016 Volunteer researcher. NORTHEASTERN UNIVERSITY, USA.
- Open-source R-based software for systems suitability and statistical process control in mass spectrometry-based quantitative proteomics.
- Advisor: O. Vitek
- 02/2009-09/2010 Volunteer researcher. INSTITUTE FOR THEORETICAL PHYSICS & MATHEMATICS, Iran.
- Research on Roman Domination in graph theory.
- Advisor: S.Akbari
- 09/2009-11/2009 Teaching assistant. SHARIF UNIVERSITY OF TECHNOLOGY, USA.
- BS course “Number Theory”. Grading, office hours
- 02/2009-09/2012 K-12 Mathematics teacher, Tehran, Iran.

## Awards

- 2006 Fellowship for B.Sc. in Mathematics, SHARIF UNIVERSITY OF TECHNOLOGY, Iran

## Publications

1. E. Dogu, S. Mohammad-Taheri, S. E. Abbatiello, M. Bereman, B. MacLean, B. Schilling, O. Vitek, “MSstatsQC : Longitudinal system suitability monitoring for targeted proteomic experiments”. *Molecular and Cellular Proteomics*. 2017

## Posters

1. “A System Suitability Monitoring Method for LC MS/MS Proteomic Experiments”. *Annual Conference of US Human Proteome Organization (USHUPO)*, Boston, USA. 2016.

## Software

- **MSstatsQC** [www.msstats.org/msstatsqc](http://www.msstats.org/msstatsqc)  
Open-source R-based software package and Shiny interface for system suitability monitoring in quantitative mass spectrometry based proteomics.

## Selected coursework

- 2017*      Short courses
- Causal Inference and Big Data Summer Institute, University of Pennsylvania, Philadelphia, USA
- 2016*      Short courses
- Design and analysis of quantitative proteomic experiments: Introduction to Statistical Methods and Practical Examples using Skyline, R and MSstats, *US HUPO*, Boston, USA
  - Master R Developer Workshop, *RStudio*. New York, USA
  - Computation & statistics for targeted proteomic, *Northeastern University*, Boston, MA.
  - EARL 2016, Advanced Shiny Workshop, Boston, USA
- 09/2016-*    PhD courses, Computer Science, NORTHEASTERN UNIVERSITY, USA.  
*05/2018*    Advanced Algorithm, Artificial Intelligence, Special Topics in Artificial Intelligence, Intensive Computer Systems, Machine Learning
- 09/2011-*    MSc courses, Mathematics, SHARIF UNIVERSITY OF TECHNOLOGY, Iran.  
*01/2014*    Applicable Stochastic Processes, Advanced Statistics, Probability Theory *II*, Topics in Statistics

## Programming skills

PROFICIENT: R, including *Shiny*, *tidyr*, *dplyr*, *ggplot2*, package development, mark-down documentation.

FAMILIAR: Java, C++, Python, MATLAB, MSP, Primavera,  $\text{\LaTeX}$