Armin Pourshafeie

Stanford University
Department of Physics
52 Dudley Ln. Apt.101
Stanford, CA 94305

apoursh@stanford.edu
http://pourshafeie.com
https://github.com/apoursh
Phone: +1 (408) 460-5038

Education

Stanford University
Ph.D. candidate in physics, 2019 (expected)
M.S. Statistics, 2018
Advisor: Carlos D. Bustamante; Co-Advisor: Steven Chu.
Research: computational genetics and biomdeical data science.

Harvard College
A.B. in Physics and Mathematics, 2009-2013.
Magna cum laude with Highest Honors in Field.

Research

Biological Network Analysis
Networks provide an effective abstraction of biological systems but real world data can be noisy. Computational tools can improve the quality of experimentally constructed networks.

Unsupervised learning from noisy networks with applications to Hi-C data.
Wang B, Zhu J, **Pourshafeie A**, Ursu O, Batzoglou S, Kundaje A.
NIPS 2016 (pp. 3305-3313).

Network Enhancement: A General Method to Denoise Weighted Biological Networks
Bo Wang*, **Armin Pourshafeie***, Marinka Zitnik*, Junjie Zhu, Carlos D. Bustamante, Serafim Batzoglou, Jure Leskovec. Nature Communications (in press) 2018
* Equal contribution

Multicenter GWAS
The current paradigm of accumulating genetic data in central location(s) is undesirable. Due to security risks, expenses, privacy/regulatory issues...). An alternative angle is distributed learning across multiple data silos.

Caring without sharing: Meta-analysis 2.0 for massive genome-wide association studies
Armin Pourshafeie, Carlos D. Bustamante, Snehit Prabhu,
(Available on biorxiv. Submitted)

Teaching

Dept. Physics, Stanford University
TA, Physics 43: Electricity and Magnetism, 2015
TA, Physics 67: Introduction to Laboratory Physics, 2015

Dept. Applied Mathematics, Harvard University
TA, Applied Math 111: Scientific Computing, 2013-2014

Dept. Physics, Harvard University
TA, Physics 123/223: Laboratory Electronics, 2012-2014

Awards and Fellowships

NIH-SGTP 2015-2018
Magna cum laude with highest honors in field 2013
Harvard University Certificate of Distinction in Teaching 2013
NSF Research Experience for Undergraduates (REU) Fellowship 2008
Harvard College Research Program (HCRP) Fellow 2011

Presentations and Talks

American Society of Human Genetics (ASHG) 2018.
Invited Session on genetic data privacy (Organizer, Moderator).

ASHG 2018. Poster presentation.

NHGRI Annual Training and Career Development Meeting 2018. Poster presentation.

ASHG 2017. Poster presentation.

NHGRI Annual Training and Career Development Meeting 2017. Poster presentation.

ASHG 2016. Poster presentation.

NHGRI Annual Training and Career Development Meeting 2016. Poster presentation.

Community Outreach

Organizer and moderator for Genetic Data Privacy invited session at
American Society of Human Genetics (2018).

Co-instructor for Stanford Artificial Intelligence Laboratory's Outreach Summer Program (SAILORS 2016). Materials at: https://github.com/apoursh/sailors-compbio

Harvard Model Congress (2012)

Languages and Skills

English (native), Farsi (native)
Python, R, MATLAB, Mathematica, C++(intermediate)

Relevant Courses

Applied Statistics (Stat315a,b), Mining Massive Data Sets (CS246), Deep Learning in Genomics and Biomedicine (CS273b), Computational Genomics (CS242), Algorithms in Biology (CS374)
Convex Optimization (EE364a,b), Statistical and ML Methods for Genomics (Stats345)

Hobbies

Weightlifting, gardening.