

# Majid Rasouli

## Curriculum vitae

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### EDUCATION

2015 – PRESENT **Computer Science**  
PHD STUDENT, 3.88/4  
University of Utah, USA

2011 – 2013 **Mathematics**  
MASTERS, 16.31/20  
Sharif University, Iran  
Ranked No.1 in Iran on QS

2006 – 2011 **Mathematics**  
BACHELORS, 15.03/20  
AWARDED CERTIFICATE AS  
**TOP 3** GRADUATES IN 2006  
CLASS  
Amirkabir University, Iran  
Ranked No.2 in Iran on QS

### SOFTWARE SKILLS

MAIN **C++ (3+ years experience)**, git,  
MPI, OpenMP (Multithread),  
Linux, SLURM

PROTOTYPING MATLAB, Julia

VISUALIZATION Paraview, Javascript, CSS, D3

FAMILIAR Python, R, PySpark, Bash

### SELECT COURSES

UNDERGRAD Basic Programming (C),  
Advanced Programming (C++),  
Linear Algebra, Logic,  
Numerical Linear Algebra,  
Probability and Stat 1 & 2,  
Numerical Analysis

GRADUATE Advanced Algorithms,  
Algorithms and Approximation,  
Parallel Computing HPC,  
Big Data Computer Systems,  
Advanced Scientific Comp 1 & 2,  
Inverse Problems, Visualization

### HONORS AND AWARDS

- Certificate for Graduation as **Top 3 GPA's** Among 20 in 2006 Class, Bachelors in Mathematics
- Ranked in **Top 1 Percent** in The National University Entrance Exam for Masters Degree, 2011, Iran.
- Scholarship for International HPC Summer School 2017, University of Colorado, Boulder
- Scholarship for SDSC Summer Institute 2018, San Diego Supercomputer Center, UCSD

### EXPERIENCES

2015-Now **Graduate Research Assistant**  
DR. HARI SUNDAR'S LAB  
University of Utah

FALL 2016 **Teaching Assistant**  
PROBABILITY AND STATISTICS  
University of Utah  
Helped students with R Studio

FALL 2017 **Teaching Assistant**  
FOUNDATIONS OF DATA ANALYSIS  
University of Utah  
Helped students with Python to do basic Machine Learning

### WORKSHOPS

2017 **International HPC Summer School**  
ATTENDEE  
University of Colorado – Boulder

2018 **SDSC Summer Institute 2018**  
ATTENDEE  
San Diego Supercomputer Center

### PROJECTS

JAN 2016 – PRESENT

Developer  
**Saena**

Saena is a highly scalable algebraic multigrid solver written in **C++** parallelized with *MPI* and *OpenMP*. It does different linear algebra operations in serial and parallel. I am the only developer of this library, under supervision of Dr. Hari Sundar.

PUBLISHED PAPER

Developer, First Author  
**Matrix-Vector Product Optimization**

We have optimized matrix-vector product, which is the most important operation in algebraic multigrid. It is implemented in Saena (C++, MPI, OpenMP). The paper is published in **IEEE HPEC18**.

SUBMITTED PAPER

Developer, First Author  
**Divide & Conquer Mat-Mat Product**

We have implemented a recursive matrix-matrix product, which is an important operation in the setup phase of algebraic multigrid. It is implemented in Saena (C++, MPI, OpenMP).

In-progress projects are listed on my website.