

# Mahsa Torkaman

## Address:

New Computer Science Department  
Stony Brook University  
Stony Brook, NY 11794-4400

Cell: (631) 974-6048  
Email: mtorkaman@cs.stonybrook.edu

**Education**                      **Stony Brook University, Ph.D. in Computer Science,**                      Fall 2014 - Present.  
Ph.D. advisor: Dr. Allen Tannenbaum  
**Current GPA: 3.950**

**Amirkabir University of Technology (Tehran Polytechnic),**  
B.Sc. in Computer Science                      Sep. 2008 - Dec. 2012,  
**GPA: 16.89/20 (3.47 US equiv.\*), last two years: 18.25/20 (3.79 US equiv.\*)**  
(\*using WES Grade Conversion Guide)

**Diploma in Mathematics and Physics Discipline**                      September 2004 - June 2008  
Fereshteh High School, Tehran, Iran  
**Total GPA: 19.84/20 .**

**Research Interests**                      • Image Processing & Medical Imaging  
• Computational Biology & Bioinformatics

**Professional Experience**                      **Research Intern, FDA**                      Summer 2016  
Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH),  
Division of Imaging, Diagnostics and Software Reliability (DIDSR)  
I worked on estimating 3D local noise power spectrum from a few FDK-reconstructed cone-beam CT scans, under the supervision of Dr. Rongping Zeng

**Research Assistant, Stony Brook University**                      Summer 2015  
I worked on geometric active contours and their application in Sulci extraction of cerebral cortex, under the supervision of Dr. Allen Tannenbaum

**Teaching Experience**                      **Teaching Assistant, Stony Brook University**                      Fall 2015  
ISE 321 - Introduction to Network Administration & CSE 533 - Network Programming,  
presented by Dr. Yanni Ellen Liu

**Teaching Assistant, Stony Brook University**                      Spring 2015  
CSE214 - Introduction to data structures and algorithms presented by Professor Ahmad Esmaili & CSE 300 - Technical Communications, presented by Dr. Hussein Badr

**Teaching Assistant, Stony Brook University**                      Fall 2014  
CSE114 - Procedural and object-oriented programming, presented by Dr. Paul Fodor

**Teaching Assistant, Amirkabir University of Technology**                      Spring 2013  
Introduction to Formal Languages & Automata, presented by Professor Nasser Hashemi

**Teaching Assistant, Amirkabir University of Technology**                      Fall 2012  
Introduction to Graph Theory and Applications, presented by Professor Nasser Hashemi

**Teaching Assistant**, Amirkabir University of Technology Fall 2011  
Introduction to Formal Languages & Automata, presented by Professor Fatemeh Zare

## Publications

- “Sulci Segmentation Using Geometric Active Contours”  
Mahsa Torkaman, Liangjia Zhu, Peter Karasev, and Allen Tannenbaum  
*SPIE Medical Imaging* 2017
  
- “Estimating 3D Local Noise Power Spectrum from a Few FDK-reconstructed Cone-beam CT Scans”  
Rongping Zeng, Mahsa Torkaman and Kyle J Myers  
*SPIE Medical Imaging* 2017
  
- “Characterizing the Noise Property of CT Images with only a Few Scans by Utilizing the Polar Separability of CT NPS”  
Mahsa Torkaman, Rongping Zeng  
*Poster in FDA’s Student Poster Symposium* Summer 2016
  
- “Haplotype Inference problem using HIPHS”  
(Inferring haplotypes from genotype data using CollHaps approach, Harmony Search and randomized quasi-greedy strategy )  
*Fourth Iranian Conference in NIGEB (National Institute of Genetic Engineering and Biotechnology )* 2012

**Research Projects** Extracting Sulci between Gyri Using Modified Geometric Active Contours. Summer 2015 under supervision of Dr. Allen Tannenbaum. (c++)

Knowledge Based Segmentation of MRI images. Summer 2014 under supervision of Dr. Allen Tannenbaum. (Matlab)

Simultaneous Anisotropic Diffusion and Histogram Modification. Course project for the Medical Imaging course. Taught by Professor Tannenbaum. (Matlab).

Detecting and extracting of pathology image artifacts. I worked in collaboration with BMI (Biomedical Informatics) department, under supervision of Dr. Joel Saltz. (Matlab)

B.Sc. Thesis: “Haplotype Inference Problem (HIP)” Under Supervision of Dr. Fatemeh Zare, Amirkabir University of Technology. The project continued as a course project for both diploid and polyploidy organisms in Computational Biology Course under the supervision of Dr. Rob Patro. (Python and Perl)

AS Connectivity: inferring policies and connectives between ASes and regional authorities in the internet. We studied AS-level connectivities and routing behaviors of these regions. Course Project for the “Fundamentals of Computer Networking” course. Taught by Dr. Phillipa Gill. (Python)

## Awards & Honors

- Awarded ORISE Fellowship by FDA/CDRH Summer 2016
- Ranked among the **top 1 %** in the nation-wide university entry exam. Summer 2008
- Ranked **78th** among 450000 participants Summer 2008  
in the nationwide Azad University of Iran entrance.

Accepted in Medical Engineering- Bioelectric  
Science and Research university

- Awarded admission to the master program for Fall of 2012 Winter 2012  
in the Faculty of Computer Science  
in Amirkabir University of Technology, Tehran, Iran  
(Entrance Exam Waived as an Award).
- Qualified for the second stage of **National, computer science Olympiad.** Spring 2006

**Courses taken**  
(related to my  
research area)

**Medical Imaging.**Taught by Dr. Tannenbaum

**Computational Biology.**Taught by Dr. Patro

**Analysis of Algorithms.**Taught by Dr. Gao

**Complex Analysis.** Taught by Dr. Tannenbaum

**Image and video processing: From Mars to Hollywood with a stop at the hospital.**Online course(coursera), Taught by Dr. Sapiro

**Differential Geometry for Computer Science.** Online course (Stanford University),  
Taught by Justin Solomon.

**Linear Algebra.**MIT OpenCourseWare, Taught by Dr. Strang.