

# Mina Shaigan

Department of Computer and Data Science  
Faculty of Mathematical Science  
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## Education

2018–2020 M.Sc., Computer Science (Algorithm and Computational Theory),  
Shahid Beheshti University, Tehran, Iran

Thesis Title: Discovering Novel Mutation Signatures Using Compound Latent Dirichlet Allocation

Thesis grade: 4.0/4.0 (20/20). Excellent

GPA: 3.69/4.0 (17.73/20)

Supervisor: Dr. Ali Katanforoush

2013–2017 B.Sc., Major in Applied Mathematics, Minor in Computer Science,  
Amirkabir University of Technology, Tehran, Iran

Thesis Title: RNA Secondary Structure Prediction Using Ant Colony Algorithm

Thesis grade: 4.0/4.0 (20/20). Excellent

GPA: 3.36/4.0 (16.33/20)

Supervisor: Dr. Fatemeh Zare-Mirakabad

## Presentations and Publications

Nov	2020	Discovering Novel Mutation Signatures Using Compound Latent Dirichlet Allocation (In Persian). 9 <sup>th</sup> Iranian Conference on Bioinformatics: Oral Presentation.
Dec	2020	Sars-Cov-2 Genome, GISAID Database (In Persian). 2 <sup>nd</sup> International Computational Biology Pre Workshop of The Amirkabir University of Technology: Oral Presentation.
Jul	2021	Discovering Novel Mutation Signatures Using Compound Latent Dirichlet Allocation (In Preparation) <u>M Shaigan, A Katanforoush</u>

## Research Interests

### ■ Artificial Intelligence

- ☐ Machine Learning
  - Graphical Models
  - Stochastic Optimization
  - Approximate Inference
  - Structured Prediction
  - Representation Learning
- ☐ Natural Language Processing

### ■ Computational Biology

- ☐ Genetics and Genomics
  - Mutational Signatures
  - Mutagenesis
  - Cancer Genomics
- ☐ Metagenomics
- ☐ Proteomics
  - Drug Discovery
  - Protein Structure
- ☐ Systems Biology

## Work Experience

Sep 2020 – Feb 2021    Web Developer - Computational Biology Research Center (CBRC), Amirkabir University of Technology, Tehran, Iran

Jul 2018 – Jan 2019    Backend Web and App Developer - Vanda Andisheh Amirkabir, Information Technology and Services Company, Tehran, Iran

Sep 2017 – Feb 2018    Web Designer - Computational Biology Research Center (CBRC), Amirkabir University of Technology, Tehran, Iran

Mar 2017 – Sep 2017    Backend Web Developer - Vestaak, Computer Software Company, Tehran, Iran

## Research Experience

Jul 2018 – Sep 2018    Researcher - Computational Biology Research Center (CBRC), Amirkabir University of Technology, Tehran, Iran

## Languages

English	TOEFL iBT score (July 14, 2021): 78/120
Persian	Native

## Skills

Programming	C++, Python, Perl, PHP (Laravel and Lumen Frameworks), HTML, CSS, JavaScript
Database Management	MySQL, SQL Server, MongoDB, Redis
Softwares	Jupyter, Octave, MATLAB, L <sup>A</sup> T <sub>E</sub> X
Machine Learning	Sklearn Library, Probabilistic Graphical Models, Data Mining Techniques and Algorithms Usage, Data Cleaning Techniques, Algorithm Design
Mathematics	Linear Algebra, Probability Foundations and Advance Probability, Graphs, Matrix Concepts, Complexity Theorem, Combinatory Foundations and Advance, Linear Optimization, Numeric Analysis, Numeric Linear Algebra

## References

- Fatemeh Zare-Mirakabad. Assistant Professor. Department of Mathematics and Computer Science, Amirkabir University of Technology, Tehran, Iran; [f.zare@aut.ac.ir](mailto:f.zare@aut.ac.ir). +98 (21) 64 54 56 74
- Ali Katanforoush. Assistant Professor. Department of Computer Science, Shahid Beheshti University, Tehran, Iran; [a\\_katanforosh@sbu.ac.ir](mailto:a_katanforosh@sbu.ac.ir). +98 (21) 29 90 30 06