

# Mina Shaigan

Department of Computer and Data 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

- Dec 2020 [Sars-Cov-2 Genome, GISAID Database.](#)  
2<sup>nd</sup> International Computational Biology Pre Workshop of Computational Biology Research Center (CBRC), Amirkabir University of Technology.
- Nov 2020 [Discovering Novel Mutation Signatures Using Compound Latent Dirichlet Allocation.](#)  
9<sup>th</sup> Iranian Conference on Bioinformatics, Iranian Bioinformatics Society (IBIS).

## Research Experience

Jul    Nov    Researcher - Computational Biology Research Center (CBRC), Amirkabir  
2018 – 2020    University of Technology, Tehran, Iran

Advisor: Dr. Fatemeh Zare-Mirakabad

- All-atom Protein Structure Reconstruction Using Random Forest and LSTM Methods
- Measure Clinical Drug-drug Similarity Using Electronic Medical Records
- Predicting Potential Drug-drug Interactions on Topological and Semantic Similarity Features Using Statistical Learning
- Predicting Protein-protein Interactions Based on a Feature Representation Method for Biological Sequences Called Bio-to-vector (Bio2vec) and a Convolution Neural Network (CNN)
- Identification of Potential Gene and MicroRNA Biomarkers for Colon Cancer using Network Analysis

## Work Experience

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

- Experience with Web Technologies Including HTML, CSS, Javascript, PHP
- Web Developing and Design
- Experience in WordPress SEO Technologies
- Exposure to PDF Generation Libraries
- Experience Designing Social Features and Integrating Social Networks and Sending Daily Dynamic Email Newsletters

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

- PHP Programming and Working Knowledge of MVC Frameworks (Laravel, Lumen)
- Experience with Web Technologies Including HTML, CSS, Javascript, Ajax, JQuery, JSON
- Integration of Database / Cache Solutions - Mysql, Redis, MongoDB
- Restful API Experience (and Experience With PHP Curl Library)
- Use Collaborative Tools Like GitLab, GitHub, Slack
- Created Test Cases and Performed API Testing The Using Postman

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

- Develop Front-end Components Based on Provided Design

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

- Integration of Database - MySQL
- Created Test Cases and Performed API Testing The Using Postman

## 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, $\text{\LaTeX}$
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;  
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- Ali Katanforoush. Assistant Professor. Department of Computer Science, Shahid Beheshti University, Tehran, Iran;  
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