

# Neda Shokraneh

COMPUTER SCIENCE PH.D. STUDENT

Simon Fraser University, 8888 University Drive, Burnaby, BC, Canada, V5A 1S6

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## Education

### SFU(Simon Fraser University)

P.H.D. IN COMPUTER SCIENCE

Burnaby, BC, Canada

Jan. 2021 - present

### SFU(Simon Fraser University)

M.S. IN COMPUTER SCIENCE (JOINT WITH BIOINFORMATICS PROGRAM)

Burnaby, BC, Canada

Sep. 2018 - Dec. 2020

- Thesis: Unsupervised annotation of regulatory domains by integrating functional genomic assays and Hi-C data

### SUT(Sharif University of Technology)

B.S. IN COMPUTER HARDWARE ENGINEERING (MINOR IN MATHEMATICAL SCIENCES)

Tehran, Iran

Sep. 2013 - Feb. 2018

- Thesis: Investigation and analysis of interactions in biological networks

## Research Interests

- Statistical Inference
- Graph Representation Learning
- Computational Biology (Genomics)
- Dimensionality Reduction and Clustering

## Publications and Preprints

- VSS-Hi-C: Variance-stabilized signals for chromatin contacts [preprint]

Neda Shokraneh Kenari, Faezeh Bayat and Maxwell W Libbrecht

- Model-based imputation enables improved resolution for identifying differential chromatin contacts in single-cell Hi-C data [Machine Learning in Computational Biology (MLCB), 2023]

Neda Shokraneh, Megan Andrews and Maxwell W Libbrecht

- Integrative chromatin domain annotation through graph embedding of Hi-C data [Bioinformatics, 2022]

Neda Shokraneh, Mariam Arab and Maxwell W Libbrecht

- Continuous chromatin state feature annotation of the human epigenome [Bioinformatics, 2022]

Habib Daneshpajouh, Bowen Chen, Neda Shokraneh, Shohre Masoumi, Kay C Wiese and Maxwell W Libbrecht

## Research experiences

### Comp bio Lab, Simon Fraser University

RESEARCHER UNDER SUPERVISION OF PROF. MAXWELL LIBBRECHT

Burnaby, BC, Canada

Sep. 2018 - Present

I am working on modeling chromatin organization at different scales and studying gene regulatory mechanisms using probabilistic models and representation learning approaches.

### NLP group, Borealis AI

MACHINE LEARNING RESEARCHER

Toronto, ON, Canada

Jan. 2021 - Apr. 2021

- We were working on comparing sequence generation and sequence editing models for the text editing task, sentence simplification, where the output sequence is highly overlapped with the input sequence.

**Lupien Lab, Princess Margaret Cancer Centre/University Health Network***Toronto, ON, Canada***RESEARCH INTERN IN MATHIEU LUPIEN RESEARCH LABORATORY***May. 2019 - July. 2019*

- We were working on enhancing the resolution of prostate cancer sample Hi-C data from experiments with shallow sequencing using deep learning methods.

**Digital Media Lab, Sharif University of Technology***Tehran, Iran***RESEARCHER (B.S THESIS) UNDER SUPERVISION OF PROF. HAMID R RABIEE***Dec. 2016 - Feb. 2018*

- We did some downstream analysis for Hi-C data such as identifying TADs and promoter-enhancer interactions. I did research on different existing methods and applied them to our data to find significant interactions.

## Teaching assistant experiences

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**Simon Fraser University***Burnaby, BC, Canada***GRADUATE TEACHING ASSISTANT***Fall 2022 - present*

- Machine Learning for the Life Sciences, instructors: Martin Ester, Maxwell Libbrecht (Fall 2023)
- Probabilistic Machine Learning, instructor: Maxwell Libbrecht (Spring 2023, Spring 2024)
- Special Topics in Artificial Intelligence, instructors: Martin Ester, Maxwell Libbrecht (Fall 2022)

**Sharif University of Technology***Tehran, Iran***UNDERGRADUATE TEACHING ASSISTANT***Fall 2014 - Spring 2018*

- Probability and Statistics, instructor: Prof. Jafari (Spring 2018)
- Computer Structure and Languages, instructor: Prof. Asadi (Fall 2017)
- Computer Networks, instructor: Prof. Jafari (Fall 2017)
- Computer Architecture, instructor: Prof. Asadi (Spring 2017)
- Probability and Statistics, instructor: Dr. Hosseini (Fall 2016)
- Computer Architecture, instructor: Prof. Ejlali (Fall 2015)
- C Language Programming, instructor: Dr. Gheibi (Fall 2014)

## Other experiences

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**Comp bio Lab, Simon Fraser University***Burnaby, BC, Canada***CONFERENCE AND JOURNAL PAPER REVIEWER OR SUB-REVIEWER***2019 - Present*

- Reviewed paper for ISMB (2021-2024), MLCB (2019,2023,2024)
- Reviewed paper for NAR genomics and bioinformatics, Nature Communication

**SFU CSGSA executive committee***Burnaby, BC, Canada***COMMUNICATIONS OFFICER***2018-2019***Winter Seminar Series (WSS) in Advanced Topics in Computer Science and Engineering.***Tehran, Iran***EXECUTIVE STAFF***Dec. 2015, Dec. 2016, Dec. 2017*

## Skills

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**Programming Languages**    **Python, R, C++****Scripting Languages**    **Bash****Languages**    **Persian (Native), English (Fluent)**

## Honors & Awards

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**2021**    , Special Grad Entrance School from Simon Fraser University*Burnaby, BC,  
Canada***2018**    , NSERC-CREATE scholarship award (Fully funded scholarship for the first year of master's joint program in Bioinformatics)*Burnaby, BC,  
Canada*