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# Parham Ghasemloo Gheidari

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## EDUCATION

**PhD — Computer Science**, *McGgill University, Canada,* **CGPA**:3.8 Expected March 2026
**Bachelor of Science — Computer Engineering**, *Sharif University of Technology, Iran,* **CGPA**:3.06 2020

## RESEARCH INTERESTS

- Citizen Science
- Computational Biology & Bioinformatics
- Machine Learning & Deep Learning
- Game Theory
- Stochastic Processes & Probability Models
- Information Theory

## RESEARCH EXPERIENCE

**Borderlands Science project**—Waldispühl Group (Montreal, QC) Sept. 2020 — Present
***Research Assistant***

- Algorithm design and implementation of the *realignment* step of the Borderlands Science project's results analysis pipeline.
- Assisting in developing AI agents trained on players' puzzle-solving behaviors.
- Creating an automated pipeline by integrating AI agents in the Borderlands Science pipeline, effectively creating a software capable of aligning input sequences by learning from and mimicking human minds.

**Comp. Bio. Lab**—School of Computing Science, Simon Fraser University (Burnaby, BC) Jul. 2018 - Dec. 2019
***Research Intern***
*Supervised by Prof. Leonid Chindelevitch*

- Exploring and implementing a mathematical concept aimed at improving the time efficiency and accuracy of an existing project titled 'Deconvoluting the within-host heterogeneity of pathogen strains'.

**Bioinformatics Research Lab**—Sharif University of Technology (Tehran, Iran) Jun. 2017 — Feb. 2020
***Research Apprentice***
*Supervised by Prof. S.A. Motahari*

## TEACHING EXPERIENCE

**McGill University (Montreal, QC)** Jan. 2021 - Present

- Supported undergraduate courses such as Algorithms and Data Structures, Programming for Life Sciences, and Computational Biology Methods, ensuring students' comprehension of complex algorithms, programming, and bioinformatics concepts.
- Led tutorials and managed office hours, offering personalized support to students to enhance their academic performance and problem-solving skills.
- Led a team of TAs for COMP 251: Algorithms and Data Structures, designed course assignments, and facilitated grading for a class of over 200 students, improving the course's structure and engagement.

**Sharif University of Technology (Tehran, Iran)** Sept. 2017 - Dec. 2019

- Assisted in teaching Data Structures and Algorithms, Operating Systems, and Advanced Programming (Python) for engineering students.
- Designed and led specialized workshops for students on algorithm optimization, Python development, and practical coding abilities.

## PUBLICATIONS

- Eddie Cai, Roman Sarrazin-Gendron, Renata Mutalova, **Parham Ghasemloo Gheidari**, Mathieu Blanchette, Sébastien Caisse, Rob Knight, Attila Szantner, Jérôme Waldispühl. *Learning the Game: Decoding the Differences Between Novice and Expert Players in a Citizen Science Game With Millions of Players*, Foundations of Digitial Games, February 2024. Full text
- Roman Sarrazin-Gendron, **Parham Ghasemloo Gheidari**, Alexander Butyaev, Timothy Keding, Eddie Cai, Jiayue Zheng, Renata Mutalova, Julien Mounthanyvong, Yuxue Zhu, Elena Nazarova, Chrisostomos Drogaris, Kornel Erhart, Gearbox Software Borderlands Science consortium, Borderlands Science players, Amélie Brouillette, Gabriel Richard, Randy Pitchford, Sébastien Caisse, Mathieu Blanchette, Daniel McDonald, Rob Knight, Attila Szantner, Jérôme Waldispühl. *Improving microbial phylogeny with citizen science within a mass-market video game*, Nature Biotechnology, April 2024. Full text
- Renata Mutalova, Roman Sarrazin-Gendron, **Parham Ghasemloo Gheidari**, Eddie Cai, Sébastien Caisse, Rob Knight, Mathieu Blanchette, Attila Szantner, Jérôme Waldispühl. *Player-Guided AI outperforms standard AI in Sequence Alignment Puzzles*, Collective Intelligence Proceedings, 2023. Full text
- Renata Mutalova, Roman Sarrazin-Gendron, Eddie Cai, Gabriel Richard, **Parham Ghasemloo Gheidari**, Sébastien Caisse, Rob Knight, Mathieu Blanchette, Attila Szantner, and Jérôme Waldispühl. *Playing the System: Can Puzzle Players Teach us How to Solve Hard Problems?*, In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23). Full text