Motahareh Sohrabi

Montréal, Canada
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Education

2021–present **M.S. in Computer Science**, *Université de Montréal/Mila*, Canada, Supervisor: Simon Lacoste-Julien.

2016–2021 **B.S. in Computer Engineering**, *Sharif University of Technology*, Iran.

Research Interests

- Deep Learning Theory
- Game Theory
- Optimization
- Causal Inference

Professional Experiences

Research

2021–Summer **Intern at Shomara, a Data Analysis and Visualization Company**.
- Analysis of Customer Lifetime Value with Databricks solutions.
- Brief introduction on working with Spark, H2O, MLflow.

2019-10–2021-06 **Member of Robustness and Interpretablity of Deep Learning Lab**.
- **Bachelor Thesis**: Interpretation of Vision Transformers with Random Walk on Attention Graph. (Code). Supervisor: Prof. Mohammad Hossein Rohban.
- Implementation and analysis of an interpretation method using Shapley value. (Code.)
- Thorough literature review on adversarial ML and robustness of neural networks.

Academic

2022-07 **Attendee of CIFAR Deep Learning Reinforcement Learning Summer School**.

2018-08 **Attendee of the Big Data Economics Summer School, Khatam University**.

2018-07–2018-08 **Attendee of the AGI machine learning challenge contest**, a three week event held by Shenakht Pajouh a research center at the Sharif University of Technology.

2018-02–2018-06 **Organizer of Complex Systems and Network journal club**.
- Learning complex systems through weekly discussion of the course Introduction to Complexity (offered by Santa Fe Institute)
- Reading the book Social and Economic Networks- by Mattew O. Jacson and weekly discussing the materials covered in a Coursera course with the same content

Teaching Assistant

Fall 2020 **Game Theory**, Prof. MohammadAmin Fazli.

Spring 2020 **Computer Networks**, Prof. Mahdi Jafari Siavoshani.

Fall 2019 **Social and Economic Networks (Graduate)**, Prof. MohammadAmin Fazli.

Spring 2019 **Artificial Intelligence**, Prof. Mohammad Hossein Rohban.

Fall 2018 **Data Structure and Algorithm**, Dr. Sharareh Alipour.

Selected Course Projects

Winter 2022 **Study of the Effect of Interaction of Players on the Convergence of Games**, Theory of Deep Learning.

Fall 2021 **Predictive Uncertainty Estimation with Bayesian Neural Networks**, Probabilistic Graphical Modeling.

Spring 2020 **P1: Retrieval System Implementation, Wikipedia Dataset | P2: Classification and Clustering of Ag News Dataset | P3: Crawling Researchgate and Implementation of Elastic Search**, Modern Information Retrieval Project, Python.

Spring 2020 **Implementation of Some Second-order and Variance Reduction Methods in Optimization**, Convex Optimization Project, Pytorch.

Spring 2018 **Microarray Data Analysis of Leukemia Cancer**, Intro to Bioinformatics, R.

Fall 2018 **Implementation of Job Finding Website**, System Analysis and Design, Django.

Spring 2017 **Messenger Database Design**, Database Design Project, Postgresql.

Spring 2017 **Life Simulation Game**, Advanced Programming Project, Java.

Selected Graduate-level Courses

- Convex Optimization
- Theory of Deep Learning
- Probabilistic Graphical Modeling
- Adversarial Machine Learning

Awards and Honors

2022 **Recipient of the scholarship under the Ministry of Higher Education's program**, from the University of Montreal.

2020 **Recipient of a full fund for a one-semester exchange program**, from Sharif University of Technology at Saint Petersburg University, Russia (Canceled by COVID19).

2016–2020 **Recipient of a yearly grant**, a grant for undergraduate studies from the Iranian National Elites Foundation for outstanding academic success.

2016 **Ranked 137th in Iran's university entrance exam**, among more than 160,000 applicants and getting admission to the country's top technical university.

2012–2016 **Member of NODET**, national organization for development of exceptional talents.

Volunteer Activities

2018–2021 **Member of the Office of Cultural Studies and Humanities**.

2019-01 **Member of the organizer team of the Winter Seminar Series**.

2017–2019 **Head of the Dormitory Student Association**.

2018-08 **Teacher and content designer of complex systems and network science workshop**, at a computer science summer school for 13 to 15-year-old teenagers.

Languages

- Persian Native
- English Fluent, Toefl 102