

# Moein Khajehnejad

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[in moein-khajehnejad](#) • [Moein-Khajehnejad](#)

## Bio

I am a PhD candidate in Data Science with more than **8 years** of experience in Machine Learning and Artificial Intelligence research among prestigious teams in multiple of the world's **top 50 research institutes** in **6 different countries**. Passionate about theoretical computer science, I study populations and time series data using machine learning and game theory. I have made significant contributions to the state-of-the-art methods in analysis of collective behaviour and decision-making in multi-agent systems.

## Education

### Monash University

*Ph.D., Department of Data Science and AI*

**Melbourne**

*2019 - current*

### Sharif University of Technology

*B.Sc., Computer Sciences & Electrical Engineering*

**Tehran**

*2011 - 2016*

## Working Experience

### Cortical Labs Pty Ltd

*Data Scientist - Part Time*

**Melbourne** 

*Jan 2022 – Current*

- **Achievement:** Developed deep RL algorithms and compared sample efficiency with live biological neurons.
- **Duties:** Building strong working relationships with international teams, Liaising with internal stakeholder, Communicating with non-technical audience, Working within cross-disciplinary teams.
- **Tools:** PyTorch, TensorFlow, Keras, Scipy, Matplotlib, scikit-learn, holoviews, Pandas, Jupyter Lab, GitLab

### Max Planck Institute for Software Systems (MPI-SWS)

*Machine Learning Researcher*

**Saarbrücken** 

*Jan 2019 – May 2019*

- **Achievement:** Mathematically solved optimal decision-making problem under strategic behaviour using real & synthetic credit card data.
- **Duties:** Guiding the project, Working closely with cross-functional teams, Designing data-driven solutions.
- **Research Areas:** Fairness, Optimal Decision-Making, Machine Teaching

### statNLP @ SUTD-MIT

*Machine Learning Intern*

**Singapore** 

*Jul 2016 – Oct 2016*

- **Achievement:** Developed a novel approach for an efficient low-dimensional network embedding.
- **Duties:** Managing research project, Using new and creative techniques to modify previous solutions.
- **Research Areas:** Network Embedding, Graph Representation Learning

### LSIR @ EPFL

*Information Systems Research Intern*

**Lausanne** 

*Jan 2016 – May 2016*

- **Achievement:** Significantly modified the accuracy of several state-of-the-art deep learning algorithms in word embedding.
- **Duties:** Developing scalable machine learning techniques to drive business outcomes for a giant food-industry stakeholder.
- **Research Areas:** Convex Optimization, Natural Language Processing, Word Embedding

### SyMLab @ HKUST

*Machine Learning Intern*

**Hong Kong** 

*Jul 2015 – Oct 2015*

- **Achievement:** Introduced a novel measure for mean first traverse distance on complex networks.
- **Duties:** Supporting the team in mathematical solutions.
- **Research Areas:** Network Science, Graph Representation Learning

## Graduate Teaching Experience

### Monash University

*Head TA for Multi agent systems and collective behaviour*

*Semester 2 – 2022*

- **Duties:** Supervising a team of 4 graduate teaching assistants, Liaising with course coordinators, Advising 40 graduate students, Preparing course and exam materials, Organizing teaching resources.

*TA for Computational Modelling and Simulation*

*Semester 1 – 2020 & 2021*

## Technical skills

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- **Dynamically-typed Programming:** Python, MATLAB, R
- **Data Visualization:** Wolfram Alpha, Tableau, MuxViz, Gephi
- **Symbolic Programming:** Mathematica
- **Markup Programming:**  $\LaTeX$ , HTML








## Invited Talks and Speeches

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- Oct 2022: **University of Oxford**
- Oct 2022: **University College London (UCL)**
- July 2022: **Spotlight at ICML**
- July 2021: **Workshop on Socially Responsible Machine Learning - ICML**
- July 2020: **Machine Learning Summer School (MLSS)**
- Dec 2019: **Human-Centric Machine Learning (HCML) Workshop - NeurIPS**

## Honors and Awards

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-  **Top 20 reviewers award, Learning on Graphs (LoG) Conference 2022.**
-  **Travel award, ICML 2022, Baltimore, United States.**
-  **Among 16 electees globally to NETHIKE 2022 Summer School by ETH Zürich, Switzerland.**
-  **Among 30 electees globally to Complex networks: theory, methods, and apps Spring School, Italy.**
-  **Travel award, NetSci-X 2022, Porto, Portugal.**
-  **Accepted to Machine Learning Summer School (MLSS 2020), Germany: acceptance rate of 13.8%.**
-  **Travel award, NeurIPS 2019, Vancouver, Canada.**
-  **Ranked among top 0.05% in the Iranian nation-wide university entrance exam of Maths and Physics.**

## Publications

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A full list of my publications is on my [Google Scholar](#). My **5 recent** publications in flagship AI conferences/journals:

- **M. Khajehnejad**, F. Habibollahi, R. Nock, E. Arabzadeh, P. Dayan, and A. Dezfouli, "*Neural Network Poisson Models for Behavioural and Neural Spike Train Data*". In Proc. of the **39th International Conference on Machine Learning (ICML 2022)**, **Spotlight paper**.[\[link\]](#) (**Acceptance Rate = 21.9%**)
- A. Khajehnejad, **M. Khajehnejad**, M. Babaei, K. P. Gummadi, A. Weller, B. Mirzasoleiman "*CrossWalk: Fairness-enhanced Node Representation Learning*". In Proc. of the **AAAI Conference on Artificial Intelligence 2022, (AAAI-22)**.[\[link\]](#) (**Acceptance Rate = 15%**)
- **M. Khajehnejad**, A. A. Rezaei, M. Babaei, J. Hoffmann, M. Jalili, A. Weller "*Adversarial Graph Embeddings for Fair Influence Maximization over Social Networks*". In Proc. of the **29th International Joint Conference on Artificial Intelligence 2020 (IJCAI'20)**.[\[link\]](#) (**Acceptance Rate = 12.6%**)
- **M. Khajehnejad**, S. Tsirtsis, B. Tabibian, A. Singla, B. Schölkopf, M. Gomez-Rodriguez "*Optimal Decision Making Under Strategic Behavior*". In Proc. of the **33rd Conference on Neural Information Processing Systems (NeurIPS 2019: Human-Centric Machine Learning workshop)**.[\[link\]](#)
- **M. Khajehnejad**, F. Habibollahi, A. Gaurav, B. J. Kagan, "*Biological Neurons vs Deep Reinforcement Learning: Sample efficiency in a simulated game-world*". In Proc. of the **36th Conference on Neural Information Processing Systems (NeurIPS 2022: DeepRL, MemARI ,and LMRL)** and accepted in the journal of **Nature Machine Intelligence**. [\[link\]](#)

## Professional Experience

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### **Program Organizer/Area Chair:**

- Workshop on Responsible AI at the International Conference on Learning Representations (**ICLR-21**)

### **Journal/Conference Reviewer:**

- IEEE Transactions on Neural Networks and Learning Systems 2023 (**IEEE TNNLS**)
- 1st International Learning on Graphs Conference 2022 (**LOG**)
- 39th International Conference on Machine Learning (**ICML 2022**)
- 5th annual ACM FAccT conference (**ACM FAccT 2022**)
- 29th International Joint Conference on Artificial Intelligence 2020 (**IJCAI 2020**)
- Journal of Future Generation Computer Systems 2020 (**FGCS**)