



# HAFEZ GHAEMI

[hafez.ghaemi@studenti.polito.it](mailto:hafez.ghaemi@studenti.polito.it)

[hafezghaemi.com](http://hafezghaemi.com)



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**Areas of interest:** bio-plausible and brain-inspired learning - neural networks and computational neuroscience - reinforcement learning - game theory

## EDUCATION

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**M.Sc. | *Data Science and Engineering (Program taught in English)*** Sep. 2020 – July 2022

Polytechnic University of Turin,

Current GPA (92 of 110 ECTS): 26.5/30.0, North American: 3.75/4.0

Turin, Italy

- **Thesis:** A Decentralized Reinforcement Learning Approach for Graphical Game Theory

**Advisors:** [Fabio Fagnani, Ph.D.](#), [Giacomo Como, Ph.D.](#)

**B.Sc. | *Major: Mechanical Engineering, Minor: Computer Engineering***

Sep. 2016 – Sep. 2020

University of Tehran,

Overall GPA: 16.24/20.0 (3.35/4.0), Major: 16.24 (3.3), Minor: 16.26 (3.4)

Tehran, Iran

- **Thesis:** Design and Implementation of a Smart Camera Slider Controller Using Deep Reinforcement Learning ([code](#))

**Advisor:** [Masoud Shariat Panahi, Ph.D.](#)

## UNDER REVIEW

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- **Ghaemi H**, Mirzaei E, Nouri M, Kheradpisheh SR. BioLCNet: Reward-modulated Locally Connected Spiking Neural Networks, [arXiv preprint \(code\)](#)
  - Nouri M, Moradi F, **Ghaemi H**, Nasrabadi AM. Towards Real-World BCI: CCSPNet, A Compact Subject-Independent Motor Imagery Framework, [arXiv preprint \(code\)](#)

## EXPERIENCE

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### Undergraduate Research Assistant

November 2019 – August 2020

Artificial Intelligence in Mechanical Engineering Lab, University of Tehran

Tehran, Iran

- Member of the project team developing a mobile application that monitors human neck posture using front camera input and head pose estimation.
- Principal investigator: [Masoud Shariat Panahi, Ph.D.](#)

### Summer Intern

July 2019 – September 2019

Biorobotics Lab, School of Mechanical Engineering, University of Tehran

Tehran, Iran

- Programming educational robots, design of dynamic mechanisms using CAD

### Undergraduate Teaching Assistant

September 2019 – January 2020

Materials Science Course, School of Mechanical Engineering, University of Tehran

Tehran, Iran

- Lecturing, solving extra problems, grading homework
- Instructor: [Ghader Faraji, Ph.D.](#)

## SKILLS

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**Languages:** English (fluent), Persian (native), Arabic (basic), Italian (basic)

**Programming (ordered by decreasing proficiency):** Python, MATLAB, C/C++, SQL, MongoDB, Julia, R, Java

**Machine learning frameworks (ordered by decreasing proficiency):** PyTorch, Scikit-Learn, Keras, Tensorflow

**Other soft and hard skills:** Linux, Git, Raspberry Pie, Arduino, Simulink, SolidWorks

## CERTIFICATES

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<b>Reinforcement Learning Specialization (<a href="#">link</a>)</b> Coursera, University of Alberta & Alberta Machine Intelligence Institute	October 2021
<b>Deep Learning Specialization (<a href="#">link</a>)</b> Coursera	May 2021
<b>Graduate Record Examinations (GRE): Q: 170, V: 162, W: 4.00 (<a href="#">link</a>)</b> Educational Testing Service (ETS)	November 2019
<b>IELTS Academic: R: 9.0, L: 8.0, W: 7.0, S: 7.0 (<a href="#">link</a>)</b> International English Language Testing System	October 2021

## SELECTED ACADEMIC PROJECTS

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<b>Fine-tuning BERT for Multi-lingual Hate Speech Detection and Text Classification (<a href="#">code</a>)   <i>Python</i></b> Deep Natural Language Processing Course, Polytechnic University of Turin	Fall 2021
<b>A Hybrid Rule-based/Q-learning Hanabi Agent (<a href="#">code</a>)   <i>Python</i></b> Computational Intelligence Course, Polytechnic University of Turin	Fall 2021
<b>Problems on Flow Optimization, Markov Chains, and Epidemic Models (<a href="#">code</a>)   <i>Python</i></b> Network Dynamics and Learning Course, Polytechnic University of Turin	Fall 2021
<b>Music Genre Classification using CRNN and Transfer Learning (<a href="#">code</a>)   <i>PyTorch</i></b> Machine Learning and Deep Learning Course, Polytechnic University of Turin	Spring 2021
<b>Comparison of ML methods for Facial and Emotional Recognition on JAFFE dataset (<a href="#">code</a>)   <i>Python</i></b> Mathematics in Machine Learning Course, Polytechnic University of Turin	Spring 2021
<b>Stock Portfolio Management Using Deep Q-Learning (<a href="#">code</a>)   <i>PyTorch</i></b> Interactive Learning Course (Audit), University of Tehran	Spring 2020
<b>Applications of Krylov methods, PCA, and SVD in real-world problems (<a href="#">code</a>)   <i>Python</i></b> Computational Linear Algebra Course, Polytechnic University of Turin	Fall 2021
<b>Waterfilling Power Allocation and LZSS Lossless Compression (<a href="#">code</a>)   <i>MATLAB</i></b> Information Theory Course, Polytechnic University of Turin	Fall 2021
<b>Object-oriented Design and Implementation of a Basic E-commerce Website (<a href="#">code</a>)   <i>C++</i></b> Advanced Programming Course, University of Tehran	Fall 2019

## AWARDS

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<b>TOPolito Scholarship</b> Awarded to Polytechnic University of Turin top international students	Oct. 2020 - Sep. 2022
<b>Iran's National Elites Foundation Membership</b> Awarded for excellent performance in the Iranian University Entrance Exam	Sep. 2016

## RELEVANT COURSES

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| • Machine Learning and Deep Learning (Graduate): 4/4 | • Network Dynamics and Learning (Graduate): 4/4    |
|  | • Deep Natural Language Processing (Graduate): 4/4 |
| • Mathematics in Machine Learning (Graduate): 4/4    | • Big Data (Graduate): 4/4                         |

- Computational Linear Algebra (Graduate): 4/4
- Game Theory (Graduate): 4/4
- Information Theory (Graduate): 3/4
- Artificial Intelligence (Undergraduate): 4/4
- Advance Programming (Undergraduate): 4/4
- Optimization of Mechanical Systems (Undergraduate): 4/4
- Numerical Computation (Undergraduate): 4/4
- Engineering Mathematics (Undergraduate): 4/4
- Interactive (Reinforcement) Learning (Graduate): Audit
- Introduction to Cognitive Science (Graduate): Audit
- Computational Neuroscience (Graduate): Audit

#### PERSONAL INTERESTS

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Podcasts, classic novels, psychological thrillers and hard sci-fis, philosophy, chess, travelling