



# HAFEZ GHAEMI

hafez.ghaemi@studenti.polito.it

hafezghaemi.com



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Areas of interest: deep learning - reinforcement learning - spiking neural networks and computational neuroscience - computational cognitive science

## EDUCATION

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| <b>Master of Science</b>   <i>Data Science and Engineering (Program taught in English)</i>   | Sep. 2020 – July 2022 |
| Polytechnic University of Turin, Current GPA (64 of 110 ECTS): 3.7/4.0, 25.3/30.0  | Turin, Italy          |
| <b>ASP Joint Degree</b>   <i>International Multidisciplinary Joint Program</i>   | Feb. 2021 – July 2022 |
| Polytechnic University of Milan, Polytechnic University of Turin   | Italy                 |
| <ul style="list-style-type: none"><li>• <b>Project:</b> SMARTCARS, research and prototyping around the autonomous driving pipeline, in collaboration with Huawei (<a href="#">repo</a>), <b>Advisors:</b> Dr. Umberto Spagnolini, Dr. Massimo Violante</li></ul> |                       |
| <b>Bachelor of Science</b>   <i>Major: Mechanical Engineering, Minor: Computer Engineering</i>   | Sep. 2016 – July 2020 |
| University of Tehran, Major GPA: 16.24/20.0, 3.3/4.0, Minor GPA: 16.26/20.0, 3.4/4.00  | Tehran, Iran          |
| <ul style="list-style-type: none"><li>• <b>Thesis:</b> Design and Physical Implementation of a Smart Camera Slider Using Deep Reinforcement Learning (<a href="#">code</a>), <b>Advisor:</b> Dr. Masoud Shariat Panahi</li></ul>                                 |                       |

## UNDER REVIEW

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- Ghaemi H, Mirzaei E, Nouri M, Kheradpisheh SR. BioLCNet: Reward-modulated Locally Connected Spiking Neural Networks., [arXiv preprint](#) (Submitted to ICLR 2022) ([code](#))
  - Nouri M, Moradi F, Ghaemi H, Nasrabadi AM. Towards Real-World BCI: CCSPNet, A Compact Subject-Independent Motor Imagery Framework., [arXiv preprint](#) (Submitted to Biomedical Signal Processing and Control) ([code](#))

## EXPERIENCE

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| <b>Undergraduate Research Assistant</b>  | November 2019 – August 2020   |
| Artificial Intelligence in Mechanical Engineering Lab, University of Tehran  | Tehran, Iran                  |
| <ul style="list-style-type: none"><li>• Member of the project team developing a mobile application that monitors human neck posture using front camera input and head pose estimation.</li></ul> |                               |
| <b>Summer Intern</b>   | July 2019 – September 2019    |
| Biorobotics Lab, School of Mechanical Engineering, University of Tehran  | Tehran, Iran                  |
| <ul style="list-style-type: none"><li>• Programming educational robots, design of dynamic mechanisms using CAD</li></ul>   |                               |
| <b>Undergraduate Teaching Assistant</b>  | September 2019 – January 2020 |
| Materials Science Course, School of Mechanical Engineering, University of Tehran   | Tehran, Iran                  |
| <ul style="list-style-type: none"><li>• Lecturing, solving extra problems, grading homework</li></ul>  |                               |

## SKILLS

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**Languages:** English (bilingual proficiency), Italian (elementary proficiency), Arabic (elementary proficiency), Persian (native)

**Programming (ordered by decreasing proficiency):** Python, MATLAB, C/C++, SQL, MongoDB, 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 20019

## SELECTED ACADEMIC PROJECTS

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<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>Price estimation on a Persian Online Cellphone Shop Dataset Using NLP (<a href="#">code</a>)   <i>Python</i></b> Artificial Intelligence Course, University of Tehran	Spring 2020
<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>Master's program full tuition waiver</b> Awarded to Polytechnic University of Turin ASP 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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| <ul style="list-style-type: none"><li>• <b>Machine Learning and Deep Learning (Graduate):</b> 4/4</li><li>• <b>Mathematics in Machine Learning (Graduate):</b> 4/4</li><li>• <b>Big Data (Graduate):</b> 4/4</li><li>• <b>Computational Linear Algebra (Graduate):</b> 4/4</li><li>• <b>Game Theory (Graduate):</b> 4/4</li><li>• <b>Information Theory (Graduate):</b> 3/4</li><li>• <b>Artificial Intelligence (Undergraduate):</b> 4/4</li></ul> | <ul style="list-style-type: none"><li>• <b>Advance Programming (Undergraduate):</b> 4/4</li><li>• <b>Optimization of Mechanical Systems (Undergraduate):</b> 4/4</li><li>• <b>Numerical Computation (Undergraduate):</b> 4/4</li><li>• <b>Engineering Mathematics (Undergraduate):</b> 4/4</li><li>• <b>Interactive Learning (Graduate):</b> Audit</li><li>• <b>Introduction to Cognitive Science (Graduate):</b> Audit</li><li>• <b>Computational Neuroscience (Graduate):</b> Audit</li></ul> |
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## PERSONAL INTERESTS

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