Hosein Fooladi

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Education

2015-2017 **M.Sc., Electrical Engineering (Biomedical Engineering)**, *Sharif University of Technology*, Tehran, Iran, *(GPA: 19.35/20)*.

2009–2014 **B.Sc., Mechanical Engineering**, *Amirkabir University of Technology (Tehran Polytechnic)*, Tehran, Iran, *(GPA: 17.26/20 Top 10%)*.

2008 **Diploma in Physics and Mathematics**, *Adib HighSchool* , Tehran, Iran, *(GPA: 19.81/20)*.

Honors and Awards

- Got selected as an exceptional talent by IRAN's Ministry of Science, Research and Technology.
- Ranked top 10% in Mechanical Engineering School and directly accepted to the Mech. Eng. M.Sc. Program at Amirkabir University of Technology. (Rank 8 out of 110)
- First rank among 15 students in Biomedical Engineering, Sharif University of Technology
- Outstanding graduate students reward, Sharif University of Technology, 2017-2018
- Ranked among top 0.1 percent in the Nationwide University Entrance Exam. (Rank 477 out of 500,000)
- Accepted in the first phase of Chemistry Olympiad and ranked in the first 800 students among the country.
- Rank 47th among over 30,000 participants in the nationwide M.Sc. entrance exam in Electrical Engineering Group(Ministry of Science, Research and Technology exam), 2015
- Rank 3rd among over 1000 participants in the nationwide M.Sc. entrance exam in Biomedical Engineering Group(Ministry of Health and Medical Education exam), 2015
- Participated in Real Rescue Robot League of Iran Open 2011 and Khwarizmi 2010 International Robotic Competitions as a member of Pasargad Robotic Team, Iran, 2010, 2011.

Advanced Graduate Course

- Reinforcement Learning, UCL, David Silver (online course)
- Deep Reinforcement Learning, UC Berkeley, Sergey Levine (online course)
- Systems Biology, Fall 2016, Sharif university (Ranked 1st)
- High Throughput Biological Data Analysis, spring 2015, Sharif university (Ranked 1st)
- Medical Image Analysis and Processing, Fall 2016, Sharif university (Ranked 1st)
- Computational Genomics, Fall 2015, Sharif university (Ranked 3rd)
- Probabilistic graphical model, Fall 2017, Sharif university (audit)
- Advanced Dynamics, Winter 2013, Amirkabir university (Ranked 1st)
- Compressed Sensing, Spring 2016, Sharif university (audit)
- Bifurcation and Dynamics of complex systems, Winter 2013, Amirkabir university (audit)
- Neuronal Dynamics, December 2013, edx (part of Massive Online Open Courses)

Research Interests

Causal learning and inference

Active causal learning in cognition

Computational cognitive science

Cooperation, competition and coordination in social learning

Open domain conversational AI

Deep Learning in drug discovery

Application of deep learning in genomics and gene expression space analysis

Systems and Synthetic Biology

Experience

Job

Spring 2018-Present **Chief scientific officer (C.S.O.) at Shenakht Pajouh**, *Reconciling Psychology knowledge with machine learning in order to build automated mental health assistant.*

Winter 2017-Present **Machine learning researcher at Cambridge system biology centre**, *Deep learning in drug discovery.*

Jan 2017-Aug 2017 **Researcher at Royan Institute**, *Reconstructing context-specific metabolic networks from gene expression data.*

Project

Spring 2019 **Recognizing arrow of time in the short stories**, *Shenakht Pajouh.*

Fall 2018 **Genealogy of artificial intelligence paradigms**, *Organizing series of workshop at the department of computer science, Sharif University of Technology.*

Summer 2018 **Deep learning in drug discovery and molecular de novo design**, *Collaboration between University of Cambridge and Sharif University.*

Summer 2017 **Latent space construction of high throughput gene expression profiles**, *Collaboration between University of Cambridge and Sharif University.*

Spring 2017 **Constructing context specific metabolic network**, *Collaboration between Royan Institute and Sharif University.*

Fall 2017 **Mathematical modeling of pattern formation during in-vitro human embryonic cells gastrulation**, *Sharif University of Technology (MSc Thesis).*

Miscellaneous

2010–2011 **Member of Technical and Executive Committee** , *Real Rescue Robot league*, Tehran, Iran.
Khwarizmi and AUTCUP Competitions

Languages

Farsi (Persian) Native

English **Fluent (TOEFL: 101)**

Japanese Familiar

Arabic Familiar

French Familiar

Computer skills

Programming	Linux, Python, R, TensorFlow, Keras, PyTorch, Rust, Maple, MATLAB, C/C++
Reinforcement learning	OpenAI Gym, Unity, Piston game engine
Mech. Eng.	Solidworks, ADAMS, Ansys, EES
Elect. Eng	MATLAB, HSpice, PSpice
Bioinformatics	Bowtie, Mummer, tophat, velvet, cufflink
General	Office (Word, PowerPoint, Excel), LaTeX, AutoCAD, Adobe Photoshop

Publications

- H. Fooladi, P. Moradi, A. Sharifi-Zarchi, B. H. Khalaj; **"Enhanced Waddington Landscape Model with Cell-Cell Communication Can Explain Molecular Mechanisms of Self-Organization"**; *Bioinformatics Journal*; March 2019. bioRxiv
- S.M. Hadi Sadati, M. Borgheinejad, H. Fooladi, M. Naraghi, A. R. Ohadi; **"Optimum Design, Manufacturing and Experiment of a Passive Walking Biped: Effects of Structural Parameters on Efficiency, Stability and Robustness on Uneven Trains"**; *Applied Mechanics and Materials*, 307:107-111 · February 2013
- F. Hosseini, H. Fooladi, M. R. Samsami; **"Recognizing Arrow Of Time In The Short Stories"**; *WiNLP 2019*· Workshop held at ACL on July 2019. arXiv
- H. Fooladi, P. Gifani; **"Constructing fusion network for drug repositioning: Merging structural, functional and drug target data"**; *In preparation* · May 2019

References

- Prof. Babak Hossein Khalaj — khalaj@sharif.edu
- Dr. Seyed Abolfazl Motahari — motahari@sharif.edu
- Dr. Ali Sharifi-Zarchi — asharifi@sharif.ir
- Dr. Peyman Gifani — pg364@cam.ac.uk
- Prof. Abdolreza Ohadi Hamedani — a_r_ohadi@aut.ac.ir