Elahe **Hosseini**

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Research Interest

- Deep Learning
- Applied Machine Learning
- Computer Vision
- Computer Architecture
- Image and Video Coding
- Energy-efficient Computing

Education

University of California, Davis *Davis, USA*

Ph.D. in Electrical and Computer Engineering (GPA: 4/4) *Jan. 2021 - Present*
- Supervised by Prof. Houman Homayoun

University of Tehran *Tehran, Iran*

M.Sc. in Computer Architecture Engineering (GPA: 17.37/20) *Sep. 2015 - Sep. 2018*
- Master's Thesis: Complexity Aware Schemes for The Intra Coding of The HEVC Standard (Score: 20/20)
- Supervised by Prof. Mahmoud Reza Hashemi and Mohammad Ghanbari

Amirkabir University of Technology (Tehran Polytechnic) *Tehran, Iran*

B.Sc. in Computer Engineering, Hardware (GPA: 16.21/20) (Last 2 years GPA: 17.13/20) *Sep. 2010 - Sep. 2015*
- B.Sc. Thesis: Designing and Implementation of Ultralightweight Encryption on RFID Passive Tags
- Supervised by Prof. Morteza Saheb Zamani

Farzanegan High School (SAMPAD) *Babol, Iran*

Diploma of Mathematics and Physics (GPA: 19.22/20) *Sep. 2005 - Jun. 2009*
- Farzanegan is the Babol branch of NODET(National Organization for Development of Exceptional Talents)

Honors & Awards

Win. 2021	**Winner** of the Graduate Fellowship Award in University of California, Davis	*USA*
Fall. 2020	**Winner** of the Helmut and Hugo Eppich Scholarship in Intelligent Systems program in Simon Fraser University	*Canada*
Fall. 2020	**Winner** of the Graduate Fellowship Award in Simon Fraser University	*Canada*
Spring. 2020	**Winner** of the Lang Wong Memorial Scholarship Award in Simon Fraser University	*Canada*
Win. 2020	**Winner** of the Graduate Fellowship Award in Simon Fraser University	*Canada*
2015 - 2018	**Ranked 1th** among Architecture Computer Engineering students in University of Tehran	*Tehran, Iran*
2015 - 2018	Full Tuition-Waiving Fellowship in M.Sc. degree	*Tehran, Iran*
Fall. 2015	**Ranked 60th** among more than 30,000 participants in the nationwide university entrance exam for M.Sc. degree, Computer Engineering	
2010 - 2015	Full Tuition-Waiving Fellowship in B.Sc. degree	*Tehran, Iran*
Fall. 2010	**Ranked top 0.01%** among over 350,000 participants in the university entrance exam for B.Sc. degree in Iran	
2005 - 2009	**Ranked the top** student during four years of high school educations	*Babol, Iran*
Win. 2008	Accepted in Nationwide Physics Olympiad first round	*Iran*
Win. 2008	Accepted in Nationwide Chemistry Olympiad first round	*Iran*

Publications

- Elahe Hosseini, Ruijie Fang, Ruoyu Zhang, Chen-Nee Chuah, Mahdi Orooji, Soheil Rafatirad, Setareh Rafatirad, Houman Homayoun, "Convolution Neural Network for Pain Intensity Assessment from Facial Expression", Submitted in 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society
- Ruijie Fang, Ruoyu Zhang, Elahe Hosseini, Seyed Mohammad Hosseini, Mahya Faghih, Mahdi Orooji, Soheil Rafatirad, Setareh Rafatirad, Houman Homayoun, "ATALS: An Adaptive Transfer Learning Based Pain Assessment System: A Real Life Unsupervised Pain Assessment Solution", Submitted in 44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society
- Hyomin Choi, Elahe Hosseini, Saeed Ranjbar Alvar, Robert A. Cohen, Ivan V. Bajić. "A dataset of labelled objects on raw video sequences." Data in Brief 34 (2021): 106701.
- Elahe Hosseini, Farhad Pakdaman, Mahmoud Reza Hashemi, and Mohammad Ghanbari. "A fine grain complexity control of HEVC intra coding using texture analysis." Journal of Real-Time Image Processing(2020): 1-16.
- Elahe Hosseini, Farhad Pakdaman, Mahmoud Reza Hashemi, and Mohammad Ghanbari. "A computationally scalable fast intra coding scheme for HEVC video encoder." Multimedia Tools and Applications (2019): 1-24.

Experience

RESEARCH EXPERIENCES

Graduate Research Assistant   *University of California, Davis*

Jan 2021 - Present

- Accelerated, Secure, and Energy-Efficient Computing Lab (ASEEC) and Robust and Ubiquitous Networking Lab (RUBINET)
- Under supervision of Prof. Houman Homayoun and Chen-Nee Chuah
- I am working on using Machine Learning technique on medical and health care application. My major focus is deploying ML in pain detection from facial images and physiological signals, developing a novel wearable physiological devise equipped with ML algorithms to detect acute and chronic stress.

Graduate Research Assistant   *Simon Fraser University*

2019 - Jan 2021

- Multimedia Laboratory
- Under supervision of Dr. Ivan Bajic
- In this laboratory,I am working on collaborative intelligence and compressing deep feature tensors.

Graduate Research Assistant   *University of Tehran*

2015 - 2019

- Multimedia Processing Laboratory (MPL)
- Under supervision of Dr. Mahmoud Reza Hashemi
- In this laboratory, I was working on Video Compression Algorithms and Low Power encoders. My major focus was power-aware and power-efficient video encoding systems.

Undergraduate Research Assistant   *Amirkabir University of Technology*

2014 - 2015

- Electronic Design Automation Laboratory (EDA)
- Under supervision of Dr. Morteza Saheb Zamani
- In this laboratory, I was working on Digital boards, specially implementing Ultralightweight Encryption Protocols on FPGA board.

TEACHING EXPERIENCES

Teacher Assistant

- Engineering Problem Solving, University of California, Davis, 2022
- Signal Analysis and Communications, University of California, Davis, 2021
- Introduction to Digital and Analog Systems, University of California, Davis, 2021
- Physics Laboratory I, Simon Fraser University, 2019 - 2020
- Microprocessor, Amirkabir University of Technology, 2014
- VLSI System Design, Amirkabir University of Technology, 2014

Skill

Programming and Scripting:	Python, TensorFlow, C, C++, Java, VHDL, Verilog
Tools:	Visual Studio, Eclipse Java, MATLAB, Mentor Graphics ModelSim, Aldec Active-HDL, Cisco Packet Tracer, GNS3, NS2, BookSim, HSpice, PSpice, MULTICUBE, R Project, Weka, Multi2Sim, SimpleScalar, MARSSx86, Gem5, Cadence SoC Encounter, Altera Quartus, Altium Designer

Certificate

2014	Certificate of Participation in the summer school on CCNA	*Tehran, Iran*
	Sharif University of Tehran	
2013	Certificate of Participation in the summer school on Netwok++	*Babol, Iran*
	Gam Institute	