

Ali Seyfi

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Education

- **M.Sc. Computer Science** **Vancouver, Canada**
University of British Columbia GPA : N.A. 2020–(Expected) August 2022
- **B.Sc. Computer Science** **Tehran, Iran**
Sharif University of Technology GPA : 3.90/4.0 2017–2020
- **B.Sc. Electrical Engineering** **Tehran, Iran**
Sharif University of Technology GPA : 3.85/4.0 2015–2020
- **High school Diploma, Physics and Mathematics** **Tehran, Iran**
Allameh Helli 5 (NODET) GPA : 4.0/4.0 2011–2015

Selected Research Projects

- **Complexity Reduction MATLAB Toolbox** **Magdeburg, Germany**
Max Planck Institute for Dynamics of Complex Technical Systems Summer 2019
Supervisor: Prof. Dr. Peter Benner
– Developed and published a MATLAB toolbox for reducing the complexity of parametric dynamical systems.
- **Model Order Reduction for Port-Hamiltonian Systems** **Magdeburg, Germany**
Max Planck Institute for Dynamics of Complex Technical Systems Summer 2019
Supervisors and Co-authors: Prof. Dr. Peter Benner, Dr. Pawan Goyal
– Implemented model order reduction method on Port-Hamiltonian Systems. (Journal paper in preparation)
- **Intelligent Dynamical Networks: Physarum Polycephalum** **Dresden, Germany**
Max Planck Institute of Molecular Cell Biology and Genetics Summer 2019
Supervisors: Prof. Dr. Carl Modes, Prof. Dr. Ivo Sbalzarini
– Defined efficiency metrics for physarum polycephalum's growth (an intelligent slime mold) using graph theory and Resistance model.
- **Data Structure Design for SCOTS Software Tool** **Munich, Germany**
Technical University of Munich Summer 2018
Supervisor: Prof. Dr. Majid Zamani
– Designed and transformed SCOTS (an open source software tool for synthesis of symbolic controllers)'s data structure using hash map method, resulting in improved efficiency.
- **Relation Between Switches of Rotating Cylinders and Relative Angular Velocity** **Tehran, Iran**
Sharif University of Technology Spring 2018
Supervisor: Prof. Ali Ghazizadeh
– Investigated the similarities of brain's perception regarding switching of rotating cylinder's direction with coupled LC circuit behavior.
- **Posture Detection using Capacitive Sensing** **Tehran, Iran**
Ambient Intelligence Research Lab, Sharif University of Technology Winter 2017
Supervisor: Prof. Hamid Aghajan
– Built a chair that detects the body posture and measures the breath rate using capacitive sensing method.
- **The Effect of Music on the EEG Signals** **Tehran, Iran**
Ambient Intelligence Research Lab, Sharif University of Technology Summer 2017
Supervisor: Prof. Hamid Aghajan
– Predicted EEG events with respect to musical harmony using MATLAB and Python.

Technical and Language skills

- **Programming Languages:** MATLAB, R, Python, C, C++, Java, \LaTeX , Arduino
- **Language Skills:** Persian(Fluent), English(TOEFL iBT score : 106), German(A1)

Selected Course Projects

- **Non-invasive Blood Pressure Estimation Using Photoplethysmography Signals** UBC ¹
Machine Learning and Signal Processing, github.com/aliseyfi75/BP-Estimation-PPG
Supervisor: Prof. Robert Xiao
Fall 2020
- **MATLAB Simulation for Implementing of Main Neuronal Dynamics Models** SUT ²
Systems Biology
Supervisor: Prof. Babak Khalaj
Spring 2019
– Created a MATLAB GUI in order to simulate dynamic models on neurons.
- **Spam Detection in Website Comments** SUT
Regression Analysis
Supervisor: Prof. Mir Omid Haji Mirsadeghi
Spring 2019
– Investigated different classification algorithms in spam detection problem using R.
- **MATLAB GUI for Numerical Analysis** SUT
Numerical Computation
Supervisor: Prof. Iman Gholampour
Fall 2017
– Created a MATLAB GUI in order to apply numerical computing methods on given functions.
- **Brain Computer Interface** SUT
Signals and Systems
Supervisor: Prof. Babak Khalaj
Spring 2017
– Classified EEG signals using machine learning algorithms in MATLAB.
- **Face Detection** SUT
Programing in C/C++
Supervisor: Prof. Mehran Rivadeh
Winter 2015
– Wrote a program in C to detect human faces in pictures.

Selected Competition Experiences

- **Robotic Arm Development** Tehran, Iran
Sharif University of Technology & Mobile Telecommunication Company of Iran (MCI)
Supervisors: Prof. Babak Khalaj, MCI Company
Fall 2018
– Programmed robotic arms to show how 5G networks boosts productivity and controls digital systems which yield to Smart factory simulation, Painter robotic arm, and EEG signal controlling toy car.
- **Smart Home, Smart Health** Tehran, Iran
Sharif University of Technology
MakeAthon Competition
Spring 2016
– Built a small-scale smart home, and a cloud-synced pulse rate meter with ability to send S.O.S using Raspberry Pi.

Selected Experience and Honors

- **Summer School in Systems Biology** Dresden, Germany
Max Planck Institute of Molecular Cell Biology and Genetics
Admitted with travel stipend
Summer 2019
- **Summer Internships**
 - **Research Assistant with full scholarship** Magdeburg, Germany
Max Planck Institute for Dynamics of Complex Technical Systems
Summer 2019
 - **Research Assistant with full scholarship** Munich, Germany
Technical University of Munich
Summer 2018
- **Administrative student activities** Tehran, Iran
 - **International Seminar in 5G Network Technology (MWTS)** SUT
Organizing committee member and finance manager
Fall and Winter 2017
 - **International Olympiad in Informatics** Young Scholars Club
Organizing committee member
Summer 2017
 - **Student MakeAthon Competition** SUT
Organizing committee member and finance manager
Summer 2016

¹University of British Columbia

²Sharif University of Technology

- **Resana (Student Community of Electrical Engineering Department)** SUT
Finance manager 2017-2018
- **IEEE Sharif student branch** SUT
Treasurer and organizing committee member 2016-2017

○ Honors

- Ranked **56th** among more than **400,000** participants in nationwide university entrance exam for BCs in Math & Physics
- **One of two** students among more than **400,000** participants who got full mark in Physics section in nationwide university entrance exam for BCs in Math & Physics
- Member of National Elite Foundation
- Reached the semifinal in National Physics Olympiad of Iran

Selected Courses

○ Machine Learning and Data Mining:	(100/100)	[Prof. Frank Wood]	(UBC)
○ M.L. and Signal Processing: (Graduate Course)	(Still not available)	[Prof. Robert Xiao]	(UBC)
○ Statistics:	(20/20)	[Prof. Omid Haji-Mirsadeghi]	(SUT)
○ Computational Genomics: (Graduate Course)	(20/20)	[Prof. Babak Khalaj]	(SUT)
○ Systems Biology: (Graduate Course)	(19.9/20)	[Prof. Babak Khalaj]	(SUT)
○ Image Processing:	(19.7/20)	[Prof. Mostafa Kamali Tabrizi]	(SUT)
○ Programming in C:	(19.7/20)	[Prof. Mehran Rivadeh]	(SUT)
○ Numerical Computation:	(19.5/20)	[Prof. Iman Gholampour]	(SUT)
○ Neuroscience:	(19.3/20)	[Prof. Ali Ghazizadeh]	(SUT)
○ Analysis of Algorithms:	(19.3/20)	[Prof. Javad Ebrahimi]	(SUT)
○ Differential Equations:	(19.0/20)	[Prof. Negin Bagherpour]	(SUT)
○ Statistical Learning: (Graduate Course)	(18.0/20)	[Prof. Omid Haji-Mirsadeghi]	(SUT)
○ Game Theory:	(17.8/20)	[Prof. Kasma Alishahi]	(SUT)
○ Linear Programming:	(17.8/20)	[Prof. Kasma Alishahi]	(SUT)
○ Discrete Mathematics:	(17.8/20)	[Prof. Morteza Alimi]	(SUT)
○ Data Structure:	(17.7/20)	[Prof. Hadi Forougmand]	(SUT)
○ Stochastic Processes:	(20/20)	[Prof. Hamid-Reza Fanai]	(SUT)
○ Reinforcement Learning: (Graduate Course)	(Audited)	[Prof. Kasma Alishahi]	(SUT)

Interests and extra-curricular activities

- Piano, Guitar and Tar player. (Especially Pop and Jazz)
- Enjoy reading poems and novels, and make podcasts from novels and share them on social media; swimming, jogging, and playing volleyballs.

References

- **Prof. Dr. Peter Benner**
 - Group Leader of "Computational Methods in Systems and Control Theory" at Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany
 - <https://www.mpi-magdeburg.mpg.de/benner>
 - benner@mpi-magdeburg.mpg.de
- **Prof. Dr. Ivo Sbalzarini**
 - Chair of Scientific Computing for Systems Biology at the Center for Systems Biology Dresden (CSBD) and Senior Research Group Leader at the Max Planck Institute of Molecular Cell Biology and Genetics
 - http://mosaic.mpi-cbg.de/?q=people/ivo_sbalzarini
 - sbalzarini@mpi-cbg.de
- **Prof. Dr. Babak Khalaj**
 - Professor of Electrical Engineering at Sharif University of Technology, Tehran, Iran
 - <http://sharif.edu/~khalaj/>
 - khalaj@sharif.edu
- **Prof. Dr. Majid Zamani**
 - Assistant professor in the Computer Science Department at University of Colorado Boulder, U.S. and Guest Professor in the Computer Science Department at Ludwig Maximilian University of Munich
 - <https://www.colorado.edu/cs/majid-zamani>
 - majid.zamani@colorado.edu