(Seyed) Amirhossein Javaheri
Curriculum Vitae

sajavaheri@connect.ust.hk
Google Scholar
Linkedin

Education

- **Hong Kong University of Science and Technology**   *Hong Kong SAR*

  Ph.D. in Electronic and Computer Engineering,   2022 -TBD
  Grade Point Average (GPA) :4.1/4.3
  Supervisor: Prof. Daniel P. Palomar

- **Sharif University of Technology**   *Tehran, Iran*

  Ph.D. in Electrical Engineering, Communications   2020 -TBD
  Grade Point Average (GPA) :19.55/20
  Supervisors: Prof. Farokh Marvasti

- **Sharif University of Technology**   *Tehran, Iran*

  M.S. in Electrical Engineering, Communications   2014 -2016
  Grade Point Average (GPA) :18.37/20
  Supervisor: Prof. Farokh Marvasti

- **Sharif University of Technology**   *Tehran, Iran*

  B.S. in Electrical Engineering, Communications   2010 -2014
  Grade Point Average (GPA) :17.63/20
  Supervisor: Dr. Mohammad Bagher Shamsollahi

Research Interest

- Graph Signal Processing
- Optimization
- Statistical Inference
- Multimedia Signal Processing
- Inverse Problems
- Deep Learning
- Computer Vision and Pattern Recognition

Honors and Awards

- Member of the National Elites Foundation. (BMN), since 2010.
- Member of the National Organization for Development of Exceptional Talents (NODET), 2003-2010.
- Ranked 1st in high school among students of all branches with highest G.P.A, Qazvin NODET High School, 2009.
- Ranked 3rd in the National Physics Olympiad, 2009.

- Ranked among the top 0.1% of (more than 280,000) participants in the Nationwide Undergraduate Entrance exam (Konkoor), 2010.
- Awarded honorary admission to the undergraduate program at the Electrical Engineering Department of Sharif University of Technology, 2010.
- Ranked 13th (among more than 18000 students) in the Nationwide Postgraduate Entrance exam in Electrical Engineering, Communications Major, 2014.
- Awarded honorary admission to the graduate program at the Electrical Engineering Department, Sharif University of Technology, 2013.
- Recipient of the Outstanding Poster award for the B.S. thesis project presentation, Department of Electrical Engineering, Sharif University of Technology, Spring 2014.
- Ranked 4th out of nearly 30 MS graduate students of class 2015 with major in Systems Communications, Sep. 2015
- Honorary admission to the PhD program at the EE Department, Sharif University of Technology, June 2018.
- Ranked 18th out of nearly 1000 entrants of the PhD entrance exam, Apr. 2019.
- Ranked 1st among nearly 40 PhD students of class 2019 with a GPA of 19.55/20, EE department of Sharif University of Technology, June 2021.
- Recipient of the dual PhD fellowship in Electronic and Computer Engineering between HKUST and Sharif University of Technology, June 2022.

Technical Skills

- **Programming Languages:**

    MATLAB, Python, R, C/C++, Assembly, Verilog VHDL, NS2/3, HTML, LaTeX.
- **Engineering Software:**

    MathCad, Simulink, Quartus, Pspice, Proteus, OPNET.
- **Pyhton Libraries:**

    OpenCV, TensorFlow, Keras, Pytorch.

Language Skills

- **Persian**: Native
- **English**: Fluent
  TOEFL   94/120   Reading: 24/30   Listening: 21/30   Speaking 26 /30   Writing: 23/30
- **Arabic**:   Reading and listening

Job Experience

- **Summer Intern-ship**, at Telecommunication Company of Iran - TCI, Tehran, Iran, *July-Oct. 2014*
- **Researcher and Programmer**, at Multimedia and Signal Processing Lab, Tehran, Iran, *Sep. 2016 - Jan. 2018*
- **Machine Learning Engineer**, at NOVE (Sharif Technology Services Complex), Tehran, Iran, *Sep. 2019 - Dec. 2021*

Teaching Experience

- **Teaching Assistant**, Optimization in FinTech, *Dr. Daniel P. Palomar, Spring 2025.*
- **Teaching Assistant**, Convex Optimization, *Dr. Daniel P. Palomar, Fall 2024.*
- **Teaching Assistant**, Data Driven Portfolio Optimization, *Dr. Daniel P. Palomar, Spring 2023, Spring 2024.*
- **Teaching Assistant**, Graph Signal Processing, *Dr. Arash Amini. Spring 2021.*
- **Teaching Assistant**, Graphical Models, *Dr. Mehdi Molkararie, Fall 2020.*
- **Teaching Assistant**, Data Compression, *Dr. Farokh Marvasti ,Fall 2019, Spring 2020.*
- **Teaching Assistant**, DSP II, *Dr. Farokh Marvasti ,Spring 2019, Spring and Fall 2020.*
- **Teaching Assistant**, Circuit Theory, *Dr. Mahtab Mirmohseni ,Fall 2014.*
- **Teaching Assistant**, Engineering Mathematics, *Dr. Ali Banai ,Spring 2015.*
- **Teaching Assistant**, Digital Communications, *Dr. Jawad Salehi ,Spring 2016.*
- Teaching as **Physics Olympiad Teacher** in NODET schools, *2013 - 2018.*

Selected Courses

- **Introduction to Programming** *Dr. Shamsaie*, 20/20 (A+)
- **General Mathematics 1** *Dr. Mohammad Ali Najafi*, 17.2/20 (A)
- **General Mathematics 2** *Dr. Reza Moghaddasi*, 17.5/20 (A)
- **Differential Equations** *Dr. Salehi*, 19.3/20 (A+)
- **Numerical Computation** *Dr. Negin Bagherpoor*, 19.3/20 (A+)
- **Engineering Mathematics** *Dr. Mohammad Mobed*, 18.6/20 (A)
- **Electrical Circuit Theory** *Dr. Mahtab Mirmohseni*, 20/20 (A+)
- **Signals and Systems** *Dr. Massoud Babaie-zadeh*, 17.5/20 (A)
- **Linear Algebra** *Dr. Saleh Tavazoei*, 18.9/20 (A+)
- **Data Networks** *Dr. Mohammad Reza Pakravan*, 17.5/20 (A)

Graduate Courses:

- **Adaptive Filters** *Dr. Massoud Babaie-zadeh*, 17.8/20 (A)
- **Information and Coding Theory** *Dr. Mohammad Reza Aref*, 17.3/20 (A)
- **Advanced Communication Systems** *Dr. Masoumeh Nasiri Kenari*, 18.7/20 (A+)
- **Digital Signal Processing II** *Dr. Farokh Marvasti*, 19.1/20 (A+)
- **Data Compression** *Dr. Farokh Marvasti*, 19.4/20 (A+)
- **Statistical Learning** *Dr. Hoda Mohammadzade*, 20/20 (A+)
- **Theory of Machine Learning** *Dr. Mohammad-ali Maddah-ali*, 20/20 (A+)
- **Deep Learning** *Dr. Emad Fatemizadeh*, 18.8/20 (A+)

- **Graphical Models** *Dr. Arash Amini and Dr. Mehdi Molkaraie*, 19.4/20 (A+)

- **Computer Vision** *Dr. Hoda Mohammadzadeh*, 20/20 (A+)

- **Convex Optimization** *Dr. Daniel P. Palomar (HKUST)*, A+

- **Introduction to Networked Sensing, Control and Estimation** *Dr. Ling Shi (HKUST)*, A+

Online Courses:

- **Deep Learning Explained** *at edX.org*

- **C++ Tutorial** *at SoloLearn.com*

- **Python 3 Tutorial** *at SoloLearn.com*

Engineering Projects

- **Mathematical Graph Plotter with Syntax Parser, Programming**, *Part of the C++ Programming Course Project, Under Supervision of Dr. Shamsaie.*

- **PWM Signal Generator, Design and Implementation**, *Part of the Logic Circuits and Lab Course Project, Under Supervision of Dr. Mahmoud Tabandeh.*

- **Timer with AVR Atmega16 and LCD, Programming and Implementation**, *Part of the Microprocessor Architecture and Lab Course Project, Under Supervision of Dr. Sirous Sadughi.*

- **Target Follower Robot with LEGO^{TM}, Design and Programming**, *Part of the Linear Control Course Project, Under Supervision of Dr. Amin Nobakhti.*

- **Echo Cancellation, Analysis and Simulation in MATLAB**, *Part of the DSP Course Project, Under Supervision of Dr. Mohammad Bagher Shamsollahi.*

- **A Network with Wireless Routing-Scheduling Agents, Simulation in OPNET**, *Part of the Information Theory Course Project, Under Supervision of Dr. Mohammad Reza Aref and Dr. Mohammad Javad Emadi*

- **Automatic Speech Emotion Recognition, Research, Programming and Simulation in Matlab**, *Part of the BSc Thesis Project, Under Supervision of Dr. Mohammad Bagher Shamsollahi*

- **Adaptive Channel Estimation and Equalization, Research and Simulation in MATLAB**, *Part of the Adaptive Filters Course Project, Under Supervision of Dr. Massoud Babaie-zadeh*

- **An Information Theoretic Approach to Blind Separation and Localization, Research**, *Part of the Information Theory Course Project, Under Supervision of Dr. Mohammad Reza Aref and Dr. Mohammad Javad Emadi*

- **Various Topics in Digital Signal Processing Including Delta-Sigma A/Ds, OFDM and CDMA Channel Coding, 1-D and 2-D Signal Reconstruction From Random Sampling, etc., Research, Analysis and Simulation in MathCad**, *Part of the DSP II Course Project, Under Supervision of Dr. Farokh Marvasti*

- **Facial Recognition Using Linear Classification Methods, Research and Simulation in MATLAB**, *Part of the Statistical Learning Course Project, Under Supervision of Dr. Hoda Mohammadzade*

- **Automatic Hand Gesture Recognition, Research and Implementation in OpenCV**, *Part of the Multi-Camera Vision course under the supervision of Dr. Hamid Aghajan*

- **Introduction to Coding Schemes for Data Compression, Research, Implementation and Simulation in MathCad**, *Part of the Data Compression Course Project, Under Supervision of Dr. Farokh Marvasti*

- **Proposing algorithms for local sparse image recovery and non-local image matrix completion, Research, Proposal and Simulation in MATLAB**, *Part of the MSc Thesis Project, Under Supervision of Dr. Farokh Marvasti*

- **Signal Processing methods for DNA Sequencing, Research, Proposal and Simulation in Matlab and Python**, *Part of a research project at Sharif Technology Services Complex*

- **Live GPS-Free Visual Navigation, Simulation and Implementation in Python and Jetson Nano**, *Part of a research project at Sharif Technology Services Complex*

- **Automatic Image Captioning**, *Part of Deep Learning Course Project, Under Supervision of Dr. Emad Fatemizadeh*

- **Video Synopsis (Summerization) Using OpenCV Pyhton**, *Part of Computer Vision Course Project, Under Supervision of Dr. Hoda Mohammadzadeh*

- **Graph Topology Learning From Incomplete Time-Series**, *Part of PhD. Research Project, Under Supervision of Dr. Farokh Marvasti and Dr. Daniel P. Palomar*

- **Graph Based Clustering for Portfolio Optimization**, *Part of PhD. Research Project, Under Supervision of Dr. Daniel P. Palomar*

- **Learning Time-Varying Graph Models for Financial Data**, *Part of PhD. Research Project, Under Supervision of Dr. Daniel P. Palomar*

- **Learning State Transition Models from Irregularly Sampled Finacial Data**, *Part of PhD. Research Project, Under Supervision of Dr. Daniel P. Palomar*

Publications

- A. Javaheri and M. B. Shamsollahi, **"On Higher Order Positive Differential Energy Operator"**, *arXiv preprint arXiv:1701.03834*, Jan 2017.

- A. Javaheri, H. Zayyani and F. Marvasti, **"Sparse Recovery of Missing Image Samples Using a Convex Similarity Index"**, *Elsevier Signal Processing*, vol. 152, May 2018.

- A. Javaheri, H. Zayyani, F. Marvasti and M.A.T. Figueiredo, **" Robust Sparse Recovery in Impulsive Noise via Continuous Mixed Norm"**, *IEEE Signal Processing Letters*, vol. 25, Jun 2018.

- H. Zayyani, A. Javaheri, **"A Robust Generalized Proportionate Diffusion LMS Algorithm for Distributed Estimation,"**, *IEEE Transactions on Circuits and Systems II: Express Briefs*, doi: 10.1109/TCSII.2020.3029780, Oct 2020.

- M Delbari, A Javaheri, H Zayyani, F Marvasti, **"Non-coherent DOA Estimation via Majorization-Minimization Using Sign Information,"**, *IEEE Signal Processing Letters*, doi: 10.1109/LSP.2022.3162153, Mar 2022.

- A. Javaheri, A. Amini, F. Marvasti, and Daniel P. Palomar, **"Learning Spatio-Temporal Graphical Models From Incomplete Observations,"**, *IEEE Transactions on Signal Processing*, doi: 10.1109/TSP.2024.3354572, Mar 2024.

- A. Javaheri, H. Zayyani and F. Marvasti, **"Recovery of Missing Samples Using Sparse Approximation via A Convex Similarity Measure"**, *SAMPTA 2017, Tallinn, Estonia, Jul 2017.*

- A. Javaheri, J. V. De M. Cardoso, and D. P. Palomar, **"Graph Learning for Balanced Clustering of Heavy-Tailed Data"**, *2023 IEEE 9th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Herradura, Costa Rica, Dec 2023, pp. 481-485..*

- A. Javaheri, A. Amini, F. Marvasti, and Daniel P. Palomar, **"Joint Signal Recovery and Graph Learning from Incomplete Time-Series"**, *ICASSP 2024, Seoul, South Korea, Apr 2024.*

- A. Javaheri and D. P. Palomar, **"Learning Time-Varying Graphs for Heavy-Tailed Data Clustering,"** *2024 European Signal Processing Conference (EUSIPCO 2024), Lyon, France, Aug 2024.*

- A. Javaheri, J. Ying, D. P. Palomar, and F. Marvasti, **"Time-Varying Graph Learning for Data with Heavy-Tailed Distribution,"**, *arXiv preprint arXiv:2501.00606*, Dec 2024 (under review at IEEE TSP).

- A. Javaheri and D. P. Palomar **"Clustering of Incomplete Data via a Bipartite Graph Structure,"**, (submitted to EUSIPCO 2025), March 2025.