Amirmohammad Haddad

Department of Electrical and Computer Engineering
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Research Interests

- Next Generation Wireless Communication and Networks
- Joint Communication and Sensing
- Wireless and Network Security
- Information and Coding Theory
- Statistical Signal Processing
- Applied Machine Learning

Education

2025-Present **Ph.D. in Electrical and Computer Engineering (Telecommunication)**, *University of California, Santa Barbara(UCSB), CA, U.S.A.*, Overall GPA: **4/4.**

2023-2024 **Ph.D. in Electrical and Computer Engineering (Telecommunication)**, *University of California, Los Angeles(UCLA), CA, U.S.A.*

2021–2022 **M.Sc. in Electrical and Computer Engineering (Telecommunication and Signal Processing)**, *Georgia Institute of Technology, GA, U.S.A.*, Overall GPA: **4/4.**

2015–2020 **B.Sc. in Electrical Engineering (Communication)**, *Sharif University of Technology, Tehran,Iran*, Overall GPA: **17.63/20 (3.76/4)** via 142 credits.

Overall GPA of last two years: **17.98/20 (3.81/4.)**

Dissertation Title: "High Dimensional Dictionary Learning", *Supervisor: Prof. Babaie zadeh.*

2011–2015 **High school, Mathematics and Physics**, *Borhan High School, Tehran, Iran*, GPA: 19.75/20.

Publications

• **Amirmohammad Haddad**, Oveys Delafrooz Noroozi, Canan Cebeci, Mark J. W. Rodwell, Upamanyu Madhow, "Scaling Wideband Hybrid Beamforming for sub-THz Communication", 2025.

• Justin Feng, **Amirmohammad Haddad**, Nader Sehatbakhsh, "To See or Not to See - Fingerprinting Devices in Adversarial Environments", 2024

Honors and Awards

2026 • Fellowship Award, University of California, Santa Barbara, CA, USA.

2023 • Fellowship Award, University of California, Los Angeles, CA, USA.

2021 • Graduate Teaching Assistantship award, Georgia Institute of Technology, GA, USA.

2015 • Ranked **51^{st} (regional rank)**, and **88^{th} (national rank)** in the National Universities Entrance Examination (Konkur) among more than 182,000 contestants.

2015–2020 • Qualified as a member of Iran's National Elites Foundation (Bonyad melli Nokhbegan Iran.)

Selected Graduate Courses and Grades at Georgia Tech

Personal and Mobile Wireless Communication	(4/4)
Computer Communication Network	(4/4)
Digital Communication	(4/4)
Random Processes	(4/4)
Information Theory	(4/4)
Advanced Digital Signals Processing	(4/4)
Fourier Technique and Signal Analysis	(4/4)
Statistical Machine Learning	(4/4)
Convex Optimization	(4/4)
Graphical Models in Machine Learning	(4/4)
Linear Systems and Control	(4/4)

Selected Graduate Courses and Grades at the UCLA and UCSB

Estimation and Detection	(4/4 (A))
Matrix Analysis for Engineers and scientist	(4/4 (A+))
Secure and Trustworthy Edge Computing Systems	(4/4)

Selected Undergraduate Courses and Grades

Signals and Systems (Prof. Babaei zadeh)	(20/20)
Digital Signals Processing (Prof. Babaei zadeh)	(18.3/20)
Communication Systems (Communication Systems1) (Prof. Behnia)	(20/20)
Digital communication (Communication Systems2) (Prof. Salehi)	(20/20)
Engineering Probability and Statistics (Prof. Maddahali)	(18/20)
Fields and Waves (Prof. Ahmadi Brojeni)	(16.2/20)
Antenna and Microwaves (Prof. Memarian)	(17.3/20)

Professional Experiences

❖ **Wireless Communication and Sensornets Lab at UCSB, CA, USA(From January 2025 - Present)**

- MIMO Wireless Communication
- THz Communication
- Wideband Beamforming for Sub-THz Communication
- Development of a Digital Twin for 6G RIS-Aided Wireless Systems

❖ **Secure Systems and Architecture Lab at UCLA, CA, USA(From January 2023 - Jan 2024)**

- Side-Channel Security

❖ **Mobile advanced research at GATech, GA, USA(April 2022 - Dec 2022)**

- Cooperative Network Localization
- Infrastructure-free Network Localization

❖ **Digital Signal Processing Lab, Sharif University of Technology, Tehran, Iran**

- Blind Source Separation
- Dictionary Learning
- Signal Processing with Tensor

❖ **Design Wireless LAN transmitter (IEEE 802.11.a) using MATLAB Simulink**

❖ **Internship**

Multimedia and Signal Processing Lab, Sharif University of Technology, Tehran, Iran.

•Noise reduction using Iterative Method and Adaptive Thresholding (IMAT), *Supervisor: Prof. Marvasti.*

Notable Projects

- Beamforming for massive MIMO full duplex mm-wave communication.
- Modulating of emanated signal for detection and classification.
- Design machine learning algorithm for solving image inpainting problem.
- Design and simulation of microstrip antenna with circular polarization using HFSS.
- Analysis of ECG signals and noise reduction for heart arrhythmia detection.
- Implementation of Huffman coding, Inverse coding, Shannon-Fano coding using MATLAB.
- Optical communication, detection and modulation using MATLAB.
- Design and implementation of FM transmitter and receiver.

Skills

Languages	C/C++, MATLAB, Python, 8085 Assembly, Verilog.
Softwares	Auto CAD, MATLAB, SIMULINK, HFSS, PSPICE, HSPICE, Altium Designer,Advance Design System (ADS).
Miscellaneous	LaTeX, MS Office, Photoshop CS.

Teaching Experiences(UCSB)

Spring 2026	"**Machine Learning**"

Teaching Experiences(UCLA)

Fall 2024	"**Theory of Digital Filter Design**"
Fall 2024	"**Systems Design**"
Summer 2024	"**Systems and Signals**"
Summer 2024	"**Introduction to Electrical Engineering**"
Spring 2024	"**Introduction to Communication Systems**"

Lecturer(UCLA)

Summer 2024	"**Logic Design of Digital Systems**"

Teaching Experiences(Georgia Tech)

Spring 2021 - Fall 2022 "**Electrical Circuits**"

Teaching Experiences (Sharif University of Technology)

Fall 2019 "**Digital Communication**", By Prof. Behnia.
Fall 2018 "**Digital Signal Processing**", By Prof. Shamsollahi.
Spring 2018 "**Digital Signal Processing**", By Prof. Shamsollahi.
Fall 2018 "**Signals and Systems**", By Prof. Nasiri kenari.
Spring 2018 "**Digital Communication**", By Prof. Salehi.
Spring 2018 "**Communication Systems**", By Prof.Behnia.
Fall 2018 "**Communication Systems**", By Prof. Pakravan.
Fall 2018 "**Communication Systems**", By Prof.Behnia.

Languages

Persian(Farsi) **Native**
English **Fluent**

References

Prof. Madhow (Research Advisor) (madhow@ece.ucsb.edu)
Prof. Nader Sehatbakhsh (nsehat@ucla.edu)
Prof. Ali Adibi (ali.adibi@ece.gatech.edu)
Prof. Gordon Stuber (stuber@ece.gatech.edu)
Prof. Babaie Zadeh (mbzadeh@sharif.edu)
Prof. Salehi (jasalehi@sharif.edu)
Prof. Behnia (behnia@sharif.edu)