Mohammad Farsi

Living in Gothenburg, Sweden

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🔗 Portfolio 🔗 LinkedIn

Profile

Experienced engineer and researcher with a solid foundation in programming, mathematics, and software development, soon to earn a PhD in Communication Systems. I bring problem-solving skills and thrive as a team player.

Areas of interests

○ Machine and Deep Learning
○ Digital Signal Processing
○ Massive MIMO Systems
○ Radio and Receiver Algorithms
○ Linearization and Optimization
○ 5G & 6G Physical Layer

Numerical tools

Matlab	●●●●
C/C++	●●●●
Python (PyTorch,etc)	●●●●
Latex	●●●●
Haskell	●●●○
Java (just started)	●●○○

Personal Qualities

• Strong communicator – I prefer discussions over monologues.

• Fluent in English – even before that first coffee.

• Team player – I enjoy the diverse flavors of collaboration.

• Versatile researcher – navigating both theory and practice.

• Focused and goal-driven – with a little detour to the coffee machine now and then.

Languages

English	●●●●
Turkish	●●●●
Swedish	●●○○

References

Available upon request.

Education

Jan. 2020-June 2024 (expected) Ph.D. | Chalmers Univ. of Technology, Sweden
Communication systems group
Thesis: Characterizing the capacity of optical channels using information theory
Parallel Tracks: Machine learning for polarization sensing, DSP for phase-noise compensation and polarization drift tracking.
Selected Courses: Machine Learning, Advanced Digital Communications, Probability and Random Processes, Creating and Managing Effective Teams.
Supervisor: Prof. E. Agrell

2016–2019: Master of Science | Tarbiat Modares University, Iran
Communication systems group | Ranked 1st in the class
Thesis: PAPR analysis and reduction for sparse code multiple access (SCMA)
Selected Courses: Numerical Optimization, Advanced Topics: 5G and beyond, Advanced Digital Signal Processing, Computer Networks.
Supervisor: Dr. H. Saeedi

2012–2016: Bachelor of Science | University of Tehran, Iran
Electrical engineering department | Top 5% of the class
Thesis: Pilot-based frequency estimation of SSB SC-FDMA signals
Supervisor: Dr. M. Sabaghian

Industrial Experience

2016 –2019: Researcher & DSP Developer | Faraz Telecom.

• Expertise in advanced radio algorithms, including:
  – Receiver DSP Chain: timing synchronization, CFO compensation, channel estimation/equalization, decoding, detection.
  – Hardware impairment (phase-noise, amplifier distortion, etc.) compensation
  – Hardware including antennas, power amplifiers, and circuitry.
• Development and simulations utilizing object-oriented programming in C++, Python, and Matlab
• Practiced agile project management as project leader in two projects.
• Collaborated in implementing algorithms on hardware (FPGA).

Research Visit, Eindhoven University of Technology

June–Aug. 2022. During the visit, I collaborated with the ICT Lab team, including Alex Alvarado , Gabrielle Liga , and Hamdi Joudeh , to analyze correlated phase noise channels. This experience enhanced my research skills and aligned with my academic and career goals

Master Thesis Supervision

2023: T. Svensson, "One-Shot Modulation Recognition with Siamese and Relation Networks using CNNs and Wavelet Scattering"

2022: H. Gopinath and S.J. Prakash, "Fault Tracing Bot in Electric Drive Software using Machine Learning"

2021: J. Lönn and S. Torstensson, "Indoor Positioning by Ultra-Wideband and WiFi-RTT"

Teaching Experience

2022, 2023: Introduction to Communications Engineering (SSY121)
2020–2023: Digital Communications (SSY125)

Scholarships and Merits

2022 Granted 80,000 SEK from Ericsson's Research and Karl G Eliasson Memorial Funds.

2019 Ranked 1st in the master's program with a GPA of 4.85/5

2012 Ranked 144th in National University Entrance Exam among 300,000 participants.

Publications

Latest: M. Farsi, C. Häger, M. Karlsson, and E. Agrell **(2024)** "Learning to Extract Distributed Polarization Sensing Data from Noisy Jones Matrices" submitted to *OFC*.

Complete list in my Google Scholar