

Farah Arabian

Cellular Interoperability Test Engineer | Apple Inc.

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SUMMARY

I am working as a Cellular Interoperability Test Engineer at headquarter of Apple Inc., I have a Ph.D. degree in Electrical and Computer Engineering from Brigham Young University (BYU), and a master's degree in Telecommunications Engineering (ICT) from the top second university of Iran (Tehran Polytechnic), and 4 years experience of working as research/teaching assistant at BYU, and also 4 years experience as UMTS/LTE RF planning and optimization engineer in Huawei and Nokia Companies.

RESEARCH

INTEREST

- Digital communications theory and digital signal processing
- Wireless and cellular systems such as LTE, 5G, and beyond
- Multipath modeling and mitigation for MIMO scenarios, and channel estimation
- Diversity combining techniques and equalization algorithms in digital communications
- Adaptive modulation and coding

EDUCATION

Ph.D., Electrical and Computer Engineering

Dissertation topic: Multipath Mitigation in Frequency Selective Channels with an Emphasis on 5G Cellular Mobile Networks and Aeronautical Mobile Telemetry Applications

Brigham Young University, Utah, USA

- Years: 2017 - 2022
- GPA: 3.95/4

M.Sc., Telecommunications Engineering (ICT)

Amirkabir University of Technology (Tehran PolyTechnic), Tehran, IRAN

- Years: 2011 - 2013
- GPA: 3.91/4 (3rd ranked student)

B.Sc., Electrical Engineering - Telecommunications

Sadjad University of Technology, Mashhad, IRAN

- Years: 2006 - 2010

PUBLICATION

- **F. Arabian** and M. Rice, "Polarization Combining and Equalization in 5G Mobile-to-Mobile Systems," in IEEE Access, vol. 10, pp. 45881-45892, 2022, doi: 10.1109/ACCESS.2022.3170841.
- **F. Arabian** and M. Rice, "On Polarization, Combining, and Equalization in Aeronautical Mobile Telemetry," in IEEE Transactions on Aerospace and Electronic Systems, doi: 10.1109/TAES.2022.3157275.
- **F. Arabian** and M. Rice, "Polarization Combining and Equalization for Aeronautical Mobile Telemetry," MILCOM 2021 - 2021 IEEE Military Communications Conference (MILCOM), 2021, pp. 544-549, doi: 10.1109/MILCOM52596.2021.9652981.
- **F. Arabian** and M. Rice, "Performance Evaluation Of 16APSK And SOQPSK-TG In The Presence Of Polarization Combining In Aeronautical Telemetry" in Proceedings of the International Telemetry Conference 2021, (Las Vegas, NV), Oct. 2021.
- **F. Arabian**, G. P. Nordin and M. Rice, "On the Ungerboeck and Forney Observation Models for Spatial Combining And Their Application to 5G Millimeter-Wave Bands," in IEEE Access, vol. 9, pp. 22214-22231, 2021, doi: 10.1109/ACCESS.2021.3054687.

- **Farah Arabian**, Michael Rice, and Rose Hu, “Who’s on First in 5G Mobile Networks: Equalizers or Polarization Diversity Combiners?” in Proceedings of Inter-mountain Engineering, Technology, and Computing Conference (i-ETC), Orem, UT, Sep. 2020.
- Ahmed Thair Al-Heety, Mohammad Tariqul Islam, Ahmed Hashim Rashid, Hasanain N Abd Ali, Ali Mohammed Fadil, **Farah Arabian** “Performance evaluation of wireless data traffic in mm wave massive MIMO communications”, Indonesian Journal of Electrical Engineering and Computer Science, 2020.
- **Farah Arabian**, Gregory P. Nordin, and Michael Rice, “ On Polarization Dependent Equalization in 5G mmWave Systems” in Proceedings of International Conference on Computing, Networking and Communications (ICNC), Big Island, HI, Feb. 2020.
- **F. Arabian** and M. Rice, “ Polarization diversity and equalization of frequency selective channels in telemetry environment for 16APSK” in Proceedings of the International Telemetry Conference 2019, (Las Vegas, NV), Oct. 2019.
- **F. Arabian** and M. Rice, “On The Performance of Filter Based Equalizers for 16APSK in Aeronautical Telemetry Environment,” in Proceedings of the International Telemetry Conference (ITC), Phoenix, AZ, Nov. 2018.
- **F. Arabian**, W. Harrison, C. Josephson, E. Perrins, and M. Rice, “On peak-to-average power ratio optimization for coded APSK,” in Proceedings of the IEEE International Symposium on Wireless Communication Systems (ISWCS), Lisbon, Portugal, Aug. 2018.

WORK
EXPERIENCES

Apple Inc., Cupertino, USA **Nov 2021 - Present**
Cellular Interoperability Test Engineer

- Working with cellular infrastructure vendors on algorithm development and features improvement
- Hands-on experience testing wireless technologies (5G-NR, LTE, UMTS, WiFi-calling, IMS etc.)

Brigham Young University, UTAH, USA **Sep 2017 - Sep 2021**
Graduate Research/Teaching Assistant

- Graduate RA/TA with an emphasis on digital communications theory and digital signal processing and their applications on 5G mobile networks and aeronautical telemetry systems

NOKIA Company, Tehran, Iran **July 2016 - Aug 2017**
RF Planning and Optimization Engineer

- Network troubleshooting
- UMTS/LTE Networks evaluation and Analysis
- Key Performance Indicator (KPI) Optimization
- Accurate Site Planning (ASP) and Automatic Cell Planning (ACP)
- Strong contribution in Nokia Network Performance Optimization (NPO) project; responsible of region one, including five big provinces of Iran, contributed to achieve more than ten percent coverage and signal quality improvement in LTE network

HUAWEI Company, Tehran, Iran **Jun 2014 - July 2016**
RF Planning and Optimization Engineer

- Network troubleshooting
- UMTS/LTE Networks evaluation and Analysis
- Key Performance Indicator (KPI) Optimization
- Accurate Site Planning (ASP) and Automatic Cell Planning (ACP)
- Cluster Optimization in WCDMA/LTE networks

ICON Company, Tehran, Iran **April 2013 - Jun 2014**
Project Manager and Project Management Assistant in Rollout Management (ROM) Project

- Led planning and implementation of MTN-Irancell rollout projects in Tehran, Ahvaz, Esfahan and Alborz provinces
- Managed subcontractors to consistent on-time and on-budget project delivery

HONORS AND AWARDS

Student engineering paper award, i-ETC conference, 2020
 iREDEFINE professional development award, ECEDHA annual conference, 2020
 Myron Hiram Nichols award, International Telemetry Conference, 2019
 Best graduate student paper award, International Telemetry Conference, 2018
 Engineering honors society Phi Kappa Phi since 2020
 Engineering honor society Eta Kappa Nu since 2017
 Outstanding Engineer in Nokia Company - Tehran Office, 2017
 Outstanding Engineer in HUAWEI Company - Tehran Office, 2015
 Ranked 3rd among graduates in ICT admitted at Tehran PolyTechnic, 2011-2012

SKILLS

- Experienced in:
 - MATLAB and Simulink
 - Python and C
- Expert in:
 - HUAWEI special softwares such as M2000, MOS, GENEX Probe and Assistant, NASTAR, OMSTAR, Actix, TEMS, Smart RNO, Idart, FMA and Atoll

TRAINING AND CERTIFICATION

- WCDMA RNO Basic Features Training (achieved the second top score among all participants)
- UMTS RF Optimization Training-Shanghai-China (achieved the second top score among all participants)
- Huawei UMTS Competency and Qualification L2
- Nokia LTE Air Interface and signaling procedures certification
- Cisco Certified Network Associate (CCNA) - Cybertech Institute

TEACHING EXPERIENCE

- Assisted teacher of signals and systems course - BYU - Fall 2019/2020
- Assisted teacher of signals and systems lab - BYU - Fall 2019
- Assisted teacher of digital communications course - BYU - Winter 2019/2021
- Assisted teacher of digital communications lab - BYU - Winter 2020/2021
- Taught Huawei RF tools - HUAWEI - Tehran office
- Taught WCDMA, LTE fundamental concepts - HUAWEI - Tehran office