Farah Arabian

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Homepage

SUMMARY

I am working as a graduate research/teacher assistant at BYU (Brigham Young University) while I'm a full-time Ph.D. student there. I have a master's degree in information and communications technology from the top second university of Iran (Tehran Polytechnic) and 4 years of experience in UMTS/LTE RF planning and optimization engineering in Huawei and Nokia Companies.

RESEARCH AREAS

- Digital communications theory and digital signal processing
- Wireless and cellular networks such as LTE, 5G and NR
- 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 Engineering
Dissertation topic: Multipath modeling and mitigation in 5G cellular networks and aeronautical telemetry systems
Brigham Young University, Utah, USA

- Years: 2017 - 2021 (expected)
- GPA: 3.95/4

M.Sc., Telecommunications Engineering (ICT)
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, G. P. Nordin and M. Rice, "On the Ungerboeck and Forney Observation Models for Spatial Combining And Their Application to 5GMillimeter-Wave Bands", in IEEE Access. (Accepted for publication).
- 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

Telemetering 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

Brigham Young University, UTAH, USA **Sep 2017 - present**
Graduate research assistant

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

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

- Network troubleshooting
- UMTS/LTE Networks evaluation and Analysis
- KPI (Key Performance Indicator) Optimization
- ASP(Accurate Site Planning) and ACP(Automatic Cell Planning)
- Strong contribution in Nokia NPO (Network Performance Optimization) project-responsible of region one, which is included of five big provinces of Iran, contributed to achieve more than 10 percent coverage and quality improvement in LTE network

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

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

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 honor society Eta Kappa Nu since 2017
Engineering honors society Phi Kappa Phi since 2020
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:
  o MATLAB and Simulink
  o Python and C

- Expert in:
  o 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 & Fall - 2020
- Assisted Teacher of Signals and systems lab - BYU - Fall 2019
- Assisted Teacher of Digital communications course - BYU - Winter 2019 & Winter 2021
- Assisted Teacher of Digital communications lab - BYU - Winter 2020 & Winter 2021
- Taught Huawei RF tools - HUAWEI - Tehran office
- Taught WCDMA, LTE fundamental concepts - HUAWEI - Tehran office