Curriculum vitae

PERSONAL INFORMATION

Mojdeh Karbalaee Motalleb

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STUDIES APPLIED FOR

Internship

WORK EXPERIENCE

01/08/2019–Present

Telecommunications engineer

sepehran, Tehran (Iran)

I am in the Research and Develop department of Sepehran company, I have done signal processing project on different digital modulation to transmit and receive signals in high frequency with high rate

01/10/2018–01/06/2019

Software developer

RMI, Tehran (Iran)

I was a python developer in this company. I have done image processing, machine and deep learning projects such as segmentation of an image by CNN methods and clustering the image based on color palettes.

14/06/2018–14/06/2019

Telecommunications engineer

Parsnet, Tehran (Iran)

I was in the Research and Develop department of Parsnet company, I have done signal processing project on LPWAN signals such as Sigfox and LoRa. Our group has obtained physical, MAC and Network layer of Sigfox protocol using matlab and simulink

EDUCATION AND TRAINING

15/09/2011–15/09/2015

Bachelor of Science in Electrical engineering

Amirkabir University of technology, Tehran (Iran)

15/09/2015–15/09/2017

Master of Science in Telecommunication system

Amirkabir university of technology, Tehran (Iran)

15/09/2017–Present

PHD of telecommunication and network system

Tehran University, Tehran (Iran)

PERSONAL SKILLS

Mother tongue(s): Persian

Foreign language(s)

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	

English	B2	C1	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

ATTACHMENTS

- mojdehkarbalaee.pdf

mojdehkarbalaee.pdf

Mojdeh Karbalaee Motalleb | Curriculum Vitae

– Tehran University– Department of Electrical and Computer Engineering

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Education

- **PHD** **2017–2022 (Expected)**
  Tehran University *Tehran*
  - **Major: Communication Systems and Network** Total GPA: 18.85/20 via 19 credits
- **Master of Science** **2015–2017**
  Amirkabir University of Technology *Tehran*
  - **Major: Communication Systems** Total GPA: 17.13/20 via 32 credits
- **Bachelor of Science** **2011–2015**
  Amirkabir University of Technology *Tehran*
  - **Major: Communication** Total GPA: 18.28/20 via 143 credits
  - **Minor: Mathematics** Total GPA: 18.42/20 via 50 credits
- **High School** Total GPA: 19.73/20 **2007–2011**
  Farzanegan1(NODET) *Tehran*

Honors

- **Ranked 7st** in Electrical Engineering,**Ranked 5st** in Communication Group, among more than 35 students, Amirkabir University of Technology, Tehran, Iran [Fall 2011]
- **Ranked 12st** in Olympiad of Electrical Engineering
- **Acceptd** for Internship as a researcher at Imperial College of London
- **Ranked 412st** in university entrance exam (Konkour), among more than 300,000 participant [Summer 2008]
- **Exempted** from university entrance exam for M.Sc. program and offered M.Sc. program in Communication System in **Amirkabir** University of Technology
- **Permitted to study Mathematics as a minor** (This permission is only awarded to talented students, introduced by the Exceptional Talents Office
- Granted admission from **Talented Student Office** of Amirkabir University of Technology for graduate study
- Accepted to study at National Organization for Development of Exceptional Talents (**Nodet**) school

Research Interests

- Wireless Systems
- Resource Allocation
- Deep Learning
- Reinforcement learning
- Cryptocurrency and Block chain
- Data Science
- Computer Programming
- IoT-Sigfox, LoRa, NB-IoT

Some Courses

◦ Introduction to CryptoCurrency	18.25	◦ Advanced Digital Signal Processing	18
◦ Convex Optimization	19.1	◦ Stochastic Processing	18.11
◦ Cellular Network	20	◦ Broad band	17.10
◦ Data Network	19	◦ Information Theory	17.5
◦ Neural Network and Deep Learning	19	◦ Computer Programming	20
◦ Coding	17	◦ Engineering Mathematics	18.6
◦ Resource Allocation	16.86	◦ Advanced Systems Programming	19
◦ Statistical Learning	16.6	◦ Reinforcement Learning	Not finished
◦ Digital Signal Processing	17.7		

Teaching Experience

- Teaching Assistant for **Computer Programming** Undergraduate Course **Fall 2013**
  - Instructor: Dr.Taheri
- Teaching Assistant for **Numerical Analysis** Undergraduate Course **Spring 2014**
  - Instructor: Dr.Taheri
- Teaching Assistant for **Computer Programming** Undergraduate Course **Fall 2015**
  - Instructor: Dr.Jahanshahi
- Teaching Assistant for **Communication I** Undergraduate Course **Fall 2015**
  - Instructor: Dr.Emadi
- Teaching Assistant for **Advanced Programming** Undergraduate Course **Spring 2016**
  - Instructor: Dr.Jahanshahi
- Teaching Assistant for **Computer Programming** Undergraduate Course **Fall 2016**
  - Instructor: Dr.PourAhmadi
- Teaching of **Software Defined Radio Lab with MATLAB** Undergraduate Course **Fall 2018**
  - Main Instructor: Dr.Shahmansouri
- Teaching (Private) for **Mathematics**

Academic Projects

- Signal Processing of digital modulation using Matlab and simulink
- Testing (Throughput, trace-route, ...) of different protocols such as ICMP(using RAW socket), TCP, UDP,...
  - Implementing by C++ in ubuntu
- Determine Color Palette and Clustering Main Colors of any image
  - Implementing Unsupervised Learning Using Python(opencv,skitilearn, PIL) and Javascript(canvas) [Winter 2019]
- Object Segmentation
  - Implementing Deep learning methods such as CNN, Using Python (Keras and Tensorflow) [Fall 2018]
- Edge Detection and image processing
  - Using Python (Opencv and PIL) [Fall 2018]
- Processing a narrow band IoT protocol using SDR dongle
  - Obtaining different layer of protocol using Matlab and Simulink [Fall 2018]

- Simulation of **Pendulum Waves** by C++
  - Supervisor: **Dr.Taheri** [Fall 2012]
- **Design a Controller for F16's Airplane :** Linear Control Systems Project, Simulated by Matlab,
  - Supervisor: **Dr.Talebi** [Fall 2013]
- Simulation of a **Traffic Light:** Logic Circuits Project, Simulated by Proteus
  - Supervisor: **Dr.Rezie** [Spring 2013]
- **Coding , Modulating and Transmitting Sound, PM Modulation, Simulating With Noise and Recieving,Demodulating and Decoding:** Communication Systems 2 Project, Simulated by Matlab
  - Supervisor: **Dr.AminDavar** [Spring 2014]
- Design **Amplifiers Circuits such as Differential amplifier** by Orcad(PSpice) and HSpice [Spring 2014]

- Design **LNA (Low Noise Amplifier)** by ADS
  - Supervisor: **Dr.Abdipour** [Fall 2014]
- Simulation of **Sound Wave** when we have absorbant and obstacles by Python in Qt Designer
  - Supervisor: **Dr.Jahanshahi** [Spring 2015]
- Simulation of **indoor localization system with Access Point Selection and Signal Reconstruction** with Matlab
  - Supervisor: **Dr PourAhmadi** [Spring 2016]
- Simulation of **Communication System** with Matlab
  - Supervisor: **Dr Amindavar** [Spring 2016]
- Simulation of Precoding and detection in **Multi User MIMO** [Spring 2016]
- Resource Allocation for CRAN system [Fall 2016-Summer 2017]
- Simulation of Narrow Band System using SDR dongle as a receiver with matlab [Fall 2017]
- Comparing different Standard of IoT [Winter 2018]

Publications

- Accepted conference:
  - m karbalaee motalleb, a kabiri, mj emadi, "Optimal Power Allocation for Distributed MIMO C-RAN System with Limited Fronthaul Capacity," in ICEE 2017
- Submitted for ICC 2020:
  - m karbalaee motalleb, v shahmansouri, s nouri naghadeh, "Joint Power Allocation and Network Slicing in an Open RAN System.," arXiv preprint arXiv:1911.01904 (2019)

B.Sc project

Under the supervision of **Dr.Emadi**
- On the **Capacity** of **Molecular** Communication over the **AIGN** Channel

M.Sc project

Under the supervision of **Dr.Emadi**
- Distributed cooperation to enhance performance of **Cloud Radio Access Netework**

PHD project

Under the supervision of **Dr.Shahmansouri**
- VNF placement and Network slicing in Open Ran system

Experience

- Work in Parsnet Company as a researcher (IoT Company) (Fall 2017 since Fall 2018)

- I was in the Research and Develop department of Parsnet company, I have done signal processing project on LPWAN signals such as Sigfox and LoRa. Our group has obtained physical, MAC and Network layer of Sigfox protocol using matlab and simulink

- Work in RMI Company as a backend developer (python) (software Company) (Fall 2018 since Spring 2019)
  - I am a python developer in this company. I have done image processing, machine and deep learning projects such as segmentation of an image by CNN methods and clustering the image based on color palettes
- Work in Sepehran Company as a researcher (communication system) (Summer 2019 since now)
  - I am in the Research and Develop department of Sepehran company, I have done signal processing project on different digital modulation to transmit and receive signals in high frequency with high rate

Computer skills

Programming Languages

- C++
- Python
  - Keras
  - Tensorflow
  - Pytorch (Familiar)
  - Opencv
  - PIL
  - Tornado
  - Numba
  - Numpy
  - Matplotlib
  - Cython
  - Sklearn
  - Skimage
  - Pandas
  - Os
- MFC (familiar)
- Matlab (Code and Simulation)
- VHDL (familiar)
- R (familiar)
- Javascript
- Node js(familiar)
- AngularJs(familiar)

Software tools

- Qt Designer(familiar)
- ADS
- Orcad(PSpice)
- Proteus
- Visual Studio
- HSpice(familiar)
- OPNET(familiar)
- Xilinx ISE Design Suit(familiar)
- GNU Radio using SDR dongle
- LaTeX

O.S and General Softwares

- Microsoft Windows
- Linux
- Mac
- Microsoft Office

Language Skills

- **Persian** Native
- **English** Fluent
- **French** Familiar Just start learning
- **Arabic** Familiar

Hobby

- Cycling
- Playing Guitar
- Studying English and French

- Solving geometric problems
- Driving
- Swimming

References, Further information, and Proofs are available upon Request