

# Sepand Haghighi



**Gender:** Male

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**Birth Date:** 9 March 1993

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**Marital Status:** Single

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**Place Of Birth:** Rasht, Iran

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## Education:

**2011-Present** Bachelor of Science in Digital Electronic Engineering, Amirkabir University of Technology, Tehran, Iran. (**Credits: 134/140, Last Year GPA: 3.36/4, Last Two Year GPA: 3.28/4**)

Advisor: [Dr.Majid Shalchian](#)

**Thesis:** Design a Logic Recommender System for Optimization of Digital CMOS Integrated Circuits by means of computational intelligence algorithms.

**2010-2011** Pre-University Degree, [MirzaKoochakkhan High School](#), under the supervision of NODET

(National Organization for Developing Exceptional Talents), Rasht, Iran. **GPA: 19.40/20**

**2007-2010** High School Diploma majoring mathematics, [MirzaKoochakkhan High School](#), National Organization for Developing Exceptional Talents, Rasht, Iran. **GPA: 18.40/20**

## Other Education:

**2014-2015** Data Science Specialization on Coursera by Johns Hopkins University (Credits: **9/9, Total Grade: 95.8/100 (3.78/4)**)

Instructors: [Dr.Roger D. Peng](#) - [Dr.Jef Leek](#) – [Dr.Brian Caffo](#)

## Research Interest:

- Image Processing
- Machine Learning
- Digital Electronic
- Neural Network
- Embedded System Design

## Awards and Honors:

**2009 Achieving the 3<sup>rd</sup> Place in 11<sup>th</sup> Khwarizmi Youth Award**,Field of Electrical and Electronic Inventions,Awarded by President,Ministry of Science,Research and Technology and Ministry of Education,Tehran,Iran

**2009 Achieving the 4<sup>th</sup> Place in 11<sup>th</sup> Khwarizmi Youth Award**,Field of Electrical and Electronic Inventions,Awarded by President,Ministry of Science,Research and Technology and Ministry of Education,Tehran,Iran,

**2009** Achieving the **5<sup>th</sup>** Place in Junior Soccer 1 \* 1 League,**IranOpen2009**,Iran,Qazvin,With MirzaKoochakkhan High School Team,"**DIZ** “

**2008** Achieving the **3<sup>rd</sup>** Place in “Fekre Bartar” Guilan Science and Technology Park Idea and Invention Competition,Ministry of Science,Research And Technology

**2007** Achieving the **10<sup>th</sup>** Place in Junior Extra Path Finder League,**IranOpen2007**,Iran,Tehran,With MirzaKoochakkhan High School Team,"**Speedo**”

**2006** Achieving the **10<sup>th</sup>** Place in Junior Extra Path Finder League,**Helli Cup**,Iran,Tehran,With MirzaKoochakkhan High School Team,"**Speedo**”

**2006** Achieving the **1<sup>rd</sup>** Place in Junior Extra Path Finder League,**Helli Robosaz**,Iran,Tehran,With MirzaKoochakkhan High School Team,"**Speedo**”

## Publications:

### Papers:

**Reza Vatani,Pooyan Piredeir,Sepideh Rahmatinia , Sepand Haghighi,Seyedeh Reyhaneh Kammali, “[Damash 2013 Soccer 2D Simulation Team Description Paper](#)” RoboCup Symposium , 2013**

**Sepand Haghighi Masoud Deldar Moghadam, “Connect four 1-Wire Temperature Sensors To 8Bit Microcontroller and Delay Approximation “(Unofficial)**

## Patents:

“**Hospital Smart Management System**”, Registration No. : 87986 Pub Date : Jan,20,2016 ,Data of Filling:Jul,15,2014 (Registered in Iran,Certificate Of Grant of Patent)

“**Smart Pen**”,Registration No.: 70380,Pub Date:May,12,2011,Data of Filling:Jul,3,2010(Registered in Iran,Certificate Of Grant of Patent)

“**Optical Egg Tester**”,Registration No.:59214,Pub Date:Jun,15,2009,Data of Filling:May,10,2009(Registered in Iran,Certificate Of Grant of Patent)

“**AVR Wireless Programmer With Ability Of Encoding**” , Registration No.:59831,Pub Date:Jul,20,2009,Data of Filling:Jun,25,2009(Registered in Iran,Certificate Of Grant of Patent)

## Presentation:

**Fall 2015** “Multimedia Signals Semantic Processing”, Multimedia Course Final Presentation

**Winter2014** “Thermoelectric Cooling Methods and Smart Wall Design”, Research and Report Methods Final Presentation

## Other Projects:

**Jan 2016** Design and develop a software package for objective & subjective observation of breast cancer surgery

**Jan 2016** Design and implementation of wireless pulse sensor (Electronic Measurement Final Project) [\[Link\]](#)

**Dec 2015** Design and implementation of simple piano by 4046 VCO (Electronic 3 Final Project) [\[Link\]](#)

**Dec 2015** **pylist** (New Python Package for Generating music playlist) [\[Package Page\]](#)

**Oct 2015** **qpge** (New Python Package for Generating Simple Academic Homepage in 3-min) [\[Package Page\]](#)

**Summer2015** “Design a microcontroller based circuit for line of sight semiconductor laser communication system” (Internship Project)

**Jun 2015** **Developing** New Error Detection Package in Python (Data Transmission Course Final Project) [\[Package Page\]](#)

**Winter2014** “Design A Full-Adder by ULPFA in L-Edit”, VLSI System Design Final Project (Best Project)

**Fall 2014** “Design and implementation of a BCD-ADDER in Proteus “, Logic Circuits and Digital Design Final Project

**Fall 2015** “Implementation of Horn-Schunck and Lucas Kanade Algorithm for Optical Flow in Matlab”, Multimedia Systems Final Project

## Teaching Experience:

**Fall 2013** Teaching Assistant (C++ Programming, [Dr.Ali Pourmohammad](#)), AmirKabir University of Technology

**14Dec 2012** Introduction to Machine Learning, SalamCup 2012, Tehran, Iran

**Jun 2012-Aug2012** AVR Microcontroller, [MirzaKoochakhan High School](#) , Rasht , Iran

## Responsibility and Membership:

**Jun 2015-Present Researcher** at Photonic Research Lab (AmirKabir University of Technology) (Internship)

**2013-Present Student Member of IEEE (Membership Number: 92581831)**

**2013-Present Member of IEEE Computational Intelligence Society**

**2012-Present** Machine Vision System Designer of Marlik Cansat Team (Finalist in 2<sup>nd</sup> Iran Cansat Competition)

**2011- Present** Founder and Director of Talent Search of Marlik Institute of Technology and Innovation

**2009-2012 Manager** and Electronic Board Designer of DIZ Micromouse Team (Joined Marlik Inst.)

**2009 Captain** and Electronic Board Designer of DIZ Junior Soccer Team (Participated In IranOpen 2009)

**2007-2009 Electronic** Board Designer of Spinas Junior Rescue Team (Participated In IranOpen 2008)

**2006-2009 Electronic** Board Designer Of Speedo Junior Extra Path Finder Team (Participated In HelliRobosaz,HelliCup,IranOpen 2007,2008)

**2009 Scientific** head of 5th Seminar of Exceptional Talents Schools, named as “Jelvehaye Sampad”

## Selected Courses:

- **Linear Algebra (19.5/20)**
- **Microprocessor And System Interface (18/20)**
- **Laser Electronic (18/20)**
- **Logic Circuit And Digital Design (18.21/20)**
- **VLSI System Design (16.5/20)**
- **Analog Communication (18.5/20)**
- **Electronic 3 (17.25/20)**
- **Computer Programming (19.3/20)**
- **Advanced Programming (17.5/20)**
- **Practical Machine Learning (100/100)**
- **Regression Models (100/100)**
- **Multimedia Systems (19.5/20)**
- **Electronic Measurement (19/20)**
- **Research Methods (20/20)**

## Skills:

**Engineering Software:** Matlab (Octave)-Orcad-Altium Designer-Proteus-Labview

**Programming Languages:** Python – Ruby – C/C++ - Basic-R-VHDL-Verilog-CSS-JavaScript-HTML

**IDE:** Visual Studio – RAD Studio – Bascom – MPLAB – MicroCode Studio – Keil

**General Software:** Microsoft Office (Word, PowerPoint, Excel)

- Embedded System Programming (PIC, AVR, ARM Microcontroller)
- Electronic Board Designing
- Digital Image Processing
- Making PCB At Home Using: Marker-Toner Transfer-Laminator-Letraset

## References:

- **Dr.Majid Shalchian**  
(Assistant Professor – AmirKabir University of Technology)  
Email: [shalchian@aut.ac.ir](mailto:shalchian@aut.ac.ir)
- **Dr.Saeed Sharifian**  
(Assistant Professor – AmirKabir University of Technology)  
Email: [sharifian\\_s@aut.ac.ir](mailto:sharifian_s@aut.ac.ir)
- **Dr.Hassan Kaatuzian**  
(Associate Professor – AmirKabir University of Technology)  
Email: [hsnkato@aut.ac.ir](mailto:hsnkato@aut.ac.ir)
- **Dr.Ali Pourmohammad**  
(Part Time Lecturer – AmirKabir University of Technology)  
Email: [pourmohammad@aut.ac.ir](mailto:pourmohammad@aut.ac.ir)
- **Dr.Ahmad Kaviani**  
(Professor – Tehran University of Medical Science)  
Email: [akaviani@tums.ac.ir](mailto:akaviani@tums.ac.ir)