

# Abolfazl Danayi

## Academic Resume

Amirkabir University of Technology, Tehran, Iran  
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### Education

- 2017-Present **M.Sc. in Digital Electronic Systems**, Amirkabir University of Technology.  
Current GPA: **3.80/4**
- 2013–2017 **B.Sc. in Electrical Engineering**, Amirkabir University of Technology.  
Total GPA: **3.86/4 (18.69/20)**  
**Ranked 3rd**, among Electronics group graduated students. (By total GPA)
- 2009–2013 **Physics and Mathematics**, National Organization for Development of Exceptional Talents (NODET) High school, Mashad, Iran.  
Total average: 19.86/20

### Research Interests

- 1 Cloud Computing
- 2 Serverless Computing
- 3 Statistics and Stochastic Processes
- 4 Cloud Computing for Internet of Things (CoT)
- 5 Statistical Machine Learning and Deep Learning

### Publications

- 2018 **“PESS-MinA: A Proactive Stochastic Task Allocation Algorithm for FaaS Edge-Cloud Environments”**, A.Danayi, S.Sharifian, *ICSPIS 2018 (IEEE)*, Tehran, Iran.  
Accepted
- 2018 **“A Novel Algorithm Based on Time-Frequency Analysis for Extracting Melody from Human Whistling”**, A.Danayi, S.Seyedin, *ICSPIS 2018 (IEEE)*, Tehran, Iran.  
Accepted
- 2018 **“uProcessors Lab: A Guide to ARM Cortex-M Microcontrollers”**, A. Danayi, *Self-published voluntary lecture-notes booklet*, Amirkabir University of Technology.  
[\[Link to this content\]](#)
- 2016 **“The Challenge of Complicated Processing in Embedded Systems as a Support for IoT (Persian)”**, S.Gholami, A.Danayi, M.Barzegari, H.Bayani, *The International Conference of Applications and Infrastructures of IoT*, University of Isfahan, Isfahan, Iran, COI (Index): IOTCONF01\_014.  
[\[Link to this content\]](#)

### Honors (Highlights)

- 2017 **Direct M.Sc. Award**, *Granted studying M.Sc. in Digital Electronics without participating in university entrance exam as a reward for the top rank in bachelors*, Amirkabir University of Technology, Tehran, Iran.
- 2017 **Ranked 3rd**, in *Electrical Engineering, Electronics group*, Amirkabir University of Technology, Tehran, Iran.
- 2015 **The head of Technical Committee**, *Appreciated by IEEE Iran-Section as “The head of technical committee” of AUTRONICS 2015*, National Circuit Design Competitions.
- 2014 **University Elite Student**, *Granted monthly fund by Iran National Elites institute as a “University elite student”*, National elites institute, Iran.
- 2013 **Ranked 391st**, in *university entrance exam (Konkour)*, among more than 300,000 participants.

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## Academic Experience (Highlights)

### M.Sc. Thesis

Current **A Proactive Elastic Microservice Scheduling Algorithm for Cloudlets in IoT Applications**, Under supervision of Dr. S. Sharifian, Amirkabir University of Technology, Tehran, Iran.

### B.Sc. Thesis

2017 **Extracting the Piano Notes from Human Whistling**, Under supervision of Dr. S. Seyedin, Amirkabir University of Technology, Tehran, Iran.

### Teaching

2018 **Microprocessors Lab (course teacher)**, Amirkabir University of Technology, Tehran, Iran.  
[\[Link to this content\]](#)

### Teaching Assistance

2017 & 2018 **Microprocessors and Interface Circuits**, Dr. S. Sharifian, Amirkabir University of Technology, Tehran, Iran.

### Workshops

2016 **Image Processing on Embedded Devices**, Tehran Software Freedom Day festival (TehSFD), Sharif University of Technology, Tehran, Iran.  
[\[Link to this content\]](#)

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## Selected Academic Projects

Spring 2018 **Wavelet-Based Haze-Removal Algorithm Implementation.**

*Implemented a **Symlet-based Image Enhancement** algorithm in order to enhance hazy images.*  
Wavelet Processing course project, Dr. H. Amindavar  
[\[Link to this content\]](#)

Spring 2018 **Generative Adversarial Nets Seminar.**

*Presented survey on Generative Adversarial Nets including **GANs, C-GANs, DC-GANs, etc.***  
Machine Learning course project, Dr. S. Seyedin  
[\[Link to this content\]](#)

Spring 2018 **Low-level Implementation of MLP.**

*Low-level implementation of the **Backpropagation** algorithm and softmax function using the **Numpy** package in Python.*  
Machine Learning course project, Dr. S. Seyedin

Fall 2017 **Implementation of QGA and CSA.**

*Implementation of **Quantum Genetics Algorithm** and **Cuckoo Search Algorithm** in Python. Used **QGA** to search the best meta-parameters set for a **NN classification problem (3 layer MLP)**.*  
Bio-inspired Machine Learning course project, Dr. S. Sharifian

Summer 2017 **Implementation of CNN for EEG Motor-Imagery Classification.**

*Implementation a **Convolutional Neural Net** as a voluntary project, in order to help a researcher team.*  
IPM (Institute for Research in Fundamental Sciences)

Spring 2017 **Implementation of C-GAN.**

*Implementation of **Conditional Generative Adversarial Networks** in TensorFlow framework in Python on **MNIST** and **CIFAR-10** Datasets using two MLP networks as **Generator** and **Discriminator**.*  
Statistical Machine Learning course project, Dr. V. Pourahmadi

Winter 2016 **Implementation of HAAR-Cascade Hand Detection Algorithm.**

*Implementation **wavelet-based HAAR-Cascade image object detection** algorithm in Python using **openCV**.*  
Advanced Programming course project, Dr. A. Jahanshahi

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## Skills

### Programming and Development

- Matlab/C++/C/Python programming, *Skilled*
- GUI development using Qt (C++) and PyQt, *Skilled*
- Development on (and for) Linux and Embedded Linux, *Experienced*
- Java/C#/R/Go, *Familiar*

### DSP and ML Implementation

- Google **Tensorflow** Deep Learning programming framework
- High Performance Digital Signal Processing (MATLAB/C++/Python)
- Real-Time Digital Signal Processing on ARM Cortex-M: CMSIS

- Image Processing using **openCV** platform
- Familiar with R language
- Familiar with Verilog and FPGA development

### Embedded Systems Development

- ARM cortex-M: CMSIS, HAL, MBED
- Arduino Platform
- ARM Cortex-A: Embedded Linux-based devices programming
- PCB Design

### Writing and Presentation Applications

- $\LaTeX$ , Microsoft Word, Microsoft Visio
- Microsoft Excel
- Microsoft PowerPoint

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## Highlighted Courses

- Stochastic Processes: Current Semester
- Image Processing: Current Semester
- Statistical Machine Learning Theory: 18.3 (Top-mark)
- Machine Learning: 20
- Wavelet Processing: 17.7 (Top-mark)
- Multimedia Systems: 19.1
- Digital Signal Processing: 19.1
- Probability and Statistics: 20

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## Non-Academic Interests

- Swimming (Professional in Frog-Style swimming)
- Blog keeping (In Persian)
- Composing electronic music using FL-Studio
- Studying basic psychological self-awareness books

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## References

**Dr. H. Amindavar**, Professor of Electrical Engineering, Amirkabir University of Technology  
[\[Link to personal webpage\]](#)

**Dr. S. Sharifian**, Assistant Professor of Electrical Engineering, Amirkabir University of Technology  
[\[Link to personal webpage\]](#)

**Dr. S. Seyedin**, Assistant Professor of Electrical Engineering, Amirkabir University of Technology  
[\[Link to personal webpage\]](#)

**Dr. V. Pourahmadi**, Assistant Professor of Electrical Engineering, Amirkabir University of Technology  
[\[Link to personal webpage\]](#)

**Dr. A. Jahanshahi**, Assistant Professor of Electrical Engineering, Amirkabir University of Technology  
[\[Link to personal webpage\]](#)