Fatemeh **Siar**

COMPUTER ENGINEER & SCIENCE
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Education

Amirkabir University of Technology (Tehran Polytechnic) *Major:Computer Vision*
MSc in Computer Science *sep 2018- Oct 2020*
- Courses GPA: 17.88, Total GPA:18.19 out of 20 (Rank 1/Total): 3.8/4
- Thesis: Visual Representation Learning by Sorting Long Sequences.

Semnan University, Iran *Major:Computer Vision*
MSc in Computer Engineering(Artificial Intelligence) *sep 2013- March 2015*
- Total GPA:15.51 out of 20
- Thesis: Improvement on Content Aware Image Retargeting.

Islamic Azad University
BSc in Computer science-Software Engineering) *sep 2007- March 2011*
- Total GPA:15.85 out of 20. GPA: 16.05 out of 20 in Relevant Courses.

Hochschule Darmstadt University of Applied Sciences_Winter School (7 ECTS) *Online, Germany*
International Winter University Programme 2021_Virtual(Pandamic year) *Jan 2021*
- Digital Society(ies)
- German Language

Online Certificate

MLOps (Machine Learning Operations) Fundamentals. *Google Cloud/Cousera*
Offered by Google Cloud Training *Jan 2020*

NLP: Building Transformer-Based Natural Language Processing Applications *NVIDIA Deep Learning Institute*
Offered by Nvidia, ID: 8A11C53BE5164149AA403A789B6E3AB7 *Nvidia GTC, April, 2021*

Learning Python *Linkedin*
Linkedin Learning *2020*

Research Interests

- **Computer Vision —> Visual Representation Learning —> Video Understanding —> Action Analysis**
- **Computer Graphic –> Image Manipulation —> Image Retargeting**
- **Image and Video Processing –> Medical Image Processing**
- **Machine Learning /Deep Learning –> ResNet –> GAN –>Federated Learning –> Merging Models**
- **Natural language processing & Speech Processing**

Highlighted Research Experience(Top 5)

GAN : My job: Generating fake images/Editing *Python/TensorFlow/Pytorch/ Colab*
- StyleGAN, StyleGAN2, PGGAN and GenForce lab works (InterFaceGAN, Sefa, Ghfeat, etc.) were the main focus of mine.

Anomaly detection Video/Defined_Object. : Team leader/6mth Competition *Python/TensorFlow/Pytorch/ Colab*
- We created our own model for Fight detection. Also we examined some popular models.

Visual Representation Learning using Sequences Sorting: My Second MSc Thesis *Python/Pytorch/ Colab*
- Proposed a model for visual representation learning by solving order prediction tasks and achieved 20% improvment(Vs state of art).

Content Aware Image Retargeting: My First MSc Thesis *Matlab, GUI*
- The computational time of seam carving is reduced by (Method_I)image segmentation & graph theory. (Method_II) Odd&Even decomposition.

Speech Recognition_Arabic pronunciation analysis *Matlab, GUI*
- We extracted different features from the speech signal and examined the impact of each feature in the pronunciation classification.

Technical Experience

Research Assistantship *ACG Lab, Ali Mohades, Amin Gheibi*
Amirkabir University of Technology, Tehran, Iran. *2018-Present*
- Research Topic: Application of Computational Geometry in Computer Vision.

Teaching Assistance *Tehran*
Amirkabir University of Technology, Tehran, Iran. *2019-Present*
- In Advanced Programming(C++/C)

Teaching Assistance *Sari*
Islamic Azad University, Iran. *2011*
- In Advanced Programming(C++/C)

Organizing committee member *WSCG 2019*
Amirkabir University of Technology, Tehran, Iran. *Tehran*
- Organizing committee member of eleventh Winter School on Computational Geometry

Freelancer & Researcher

<small>SOME PROJECTS</small>　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　*AUG 2014-now*

- Software Dev(Matlab code & GUI): Image manipulation, Automathic scanned image corrector: Rotate, Crop, ...
- Researcher(Pytorch): Super Resolution
- Researcher(Pytorch): Fake Image generation & edit, PGGAN, StyleGAN, InterFaceGan.
- Researcher(Pytorch): Action analysis.
- Researcher(Matlab code & GUI): Speech Analysis, Image Manipulation.

Technical Skills

Programming Languages:	Python, Matlab, Java, C/C++, SQL, Pascal & Basic
Software libraries and distributions:	Pytorch, TensorFlow„ Sklearn, Matplot, Pandas, Numpy, PyQt,
Cloud:	Google Colab, Microsoft Azure
Graphic:	Photoshop, Reallusion iClone, Adobe Premiere
Other:	Latex, Weka, HTML, MySQL, Netbeans, Jupyter Notebook, PyCharm, Git

Honors & Awards

2021	**First prize and first place in Anomaly Detection category,** Iran's National Elites Foundation(Rahneshan)	*Team Competitions*
2020	**Ranked 1st ,** among master students in Computer Science	*AUT*

Publications

- **Conference and Journal paper**
  - Fatemeh Siar, Amin Gheibi, Ali Mohades: "Unsupervised Learning of Visual Representations by Solving Shuffled Long Video-Frames Temporal Order Prediction". *ACM SIGGRAPH 2020 Posters, 1-2*
  - Fatemeh Siar, Saeed Mozaffari: "Utilization of ant colony algorithm in content aware image resizing method". *9th Annual Iran Conference on E-Learning 2015 (ICeLeT2015) (in persian)*
  - Fatemeh Siar, Saeed Mozaffari, "Seam Carving Speed Improvement by Odd and Even Subimages Decomposition". *Iranian Journal of Electrical and Computer Engineering (IJECE), 2018 (in persian)*
  - Fatemeh Siar, Saeid Alirezazadeh and Fatemeh Jalali, "A novel steganography approach based on ant colony optimization," 2018 6th Iranian Joint Congress on Fuzzy and Intelligent Systems (CFIS 2018) (IEEE)
  - Fatemeh Siar, Halimeh Siar, "evaluating the efficiency of deep learning in speech classification". *49th Annual Iranian mathematics conference, 2018*
- **Works in Progress or Submitted**
  - Fatemeh Siar, Amin Gheibi, Ali Mohades: "Visual Representation Learning by Sorting Long Sequences".
  - Fatemeh Siar, Saeed Mozaffari: "Image Retargeting Using Evolutionary Methods"
  - Fatemeh Siar, Saeed Mozaffari: "Image retargeting using decomposition based method"

LANGUAGE SKILLS

Persian:	Native language.
English:	Fluent
Germany:	Basic A
Arabic:	Basic A+