Fatemeh **Siar**

COMPUTER ENGINEER & SCIENCE

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Education

MSc in Computer Science   *Major:Computer Vision*
AMIRKABIR UNIVERSITY OF TECHNOLOGY (TEHRAN POLYTECHNIC)   *sep 2018- Oct 2020*
• Thesis: Visual Representation Learning by Sorting Long Sequences.

MSc in Computer Engineering(Artificial Intelligence)   *Major:Computer Vision*
SEMNAN UNIVERSITY, IRAN   *sep 2013- March 2015*
• Thesis: Improvement on Content Aware Image Retargeting.

BSc in Computer science-Software Engineering)
ISLAMIC AZAD UNIVERSITY   *sep 2007- March 2011*

International Winter University Programme 2021 (7 ECTS)   *Online,Germany*
HOCHSCHULE DARMSTADT UNIVERSITY OF APPLIED SCIENCES   *Jan 2021*
• Digital Society(ies) and German language courses.

Online Courses   *Cousera/Nvidia/Linkedin*
CERTIFICATED   *NLP/ Python/ MLOps*
• MLOps (Machine Learning Operations) Fundamentals. Offered by Google Cloud Training
• NLP: Building Transformer-Based Natural Language Processing Applications, April, 2021, ID: 8a11c53be5164149aa403a789b6e3ab7
• Learning Python, Linkedin Learning

Research Interests

• Computer Vision —> Visual Representation Learning —> Video Understanding —> Action Analysis

• Computer Graphic –> Image Manipulation —> Image Retargeting - GAN

• Machine Learning /Deep Learning –> ResNet –> GAN

• Federated Learning –> Merging Models

• Image and Video Processing –> Medical Image Processing

• Natural language processing & Speech Processing

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   *AUG 2014-now*
SOME PROJECTS
• 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.

Highlighted Research Experience(Top 5)

GAN : MY JOB: GENERATING FAKE IMAGES/EDITING   *Python/TensorFlow/Pytorch/ Colab*
• StyleGAN, StyleGAN2, PGGAN and GenForce's lab works (InterFaceGAN, Sefa, Ghfeat, etc.) were the main focus of mine.

ANOMALY DETECTION VIDEO/DEFINED_OBJECT. : TEAM LEADER/6MONTH 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 signa and examined the impact of each feature in the pronunciation classification.

Technical Skills

Programming Languages:	Python, Matlab, Java, C/C++, SQL, Pascal & Basic
Software libraries and distributions:	TensorFlow, Pytorch, 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	**Funded by WIML**, Attended ICLR2021	
2021	**Funded by AUT& Hochschule Darmstadt University**, International Winter University Programme	*Online,Germany*
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*

LANGUAGE SKILLS

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

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*