Amir Hossein **Saleknia**

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Education

M.S. in Digital Electronic Systems *Sep. 2019 - Sep. 2022*

Iran University of Science and Technology (IUST) *Tehran, Iran*

- **Thesis topic:** Development of a method for image segmentation based on knowledge distillation (Medical Images)
- **Supervisor:** Dr. Ahmad Ayatollahi, Full Professor at IUST
- **GPA:** 18.22/20 (4/4)

B.S. in electrical engineering *Sep. 2015 - Jul. 2019*

University of Zanjan *Zanjan, Iran*

- **Thesis topic:** Design Fractional-order controller for DC/DC convertors
- **Supervisor:** Dr. Abolfazl Jalilvand, Full Professor at University of Zanjan
- **GPA:** 18.30/20 (3.78/4)

Languages

English **IELTS (Academic): 7.5, C1 Proficiency**
Persian **Native**

Research Intersets

- Computer Vision
- Deep Learning
- Ensemble Learning
- Medical Image Analysis
- Pattern Recognition
- Image Segmentation
- Knowledge Distillation
- Transformers

Publications

Journal

- **A Comprehensive Study on Traffic Accident Detection, Contributing Factors, Analysis Methods, and Crash Datasets**
  Elmira Bagheri, Amir Hossein Barshooi, **Amir Hossein Saleknia**
  WILEY-HINDAWI, Journal of Advanced Transportation (JAT), 2024. **(Under Review)**

Conference

- **Multi-source Ensemble Model for Scene Recognition**
  Amir Hossein Saleknia, Ahmad Ayatollahi
  IEEE, 14th International Conference on Computer and Knowledge Engineering (ICCKE), 2024. **(Accepted)**

- **Multi Step Knowledge Distillation Framework For Action Recognition in Still Images**
  Amir Hossein Saleknia, Ahmad Ayatollahi
  IEEE, 20th CSI International Symposium on Artificial Intelligence and Signal Processing (AISP), 2024. **(Paper)**

- **NEM: Nested Ensemble Model for scene recognition**
  Amir Hossein Saleknia, Elmira Bagheri, Amir Hossein Barshooi, Ahmad Ayatollahi
  IEEE, 13th Iranian/3rd International Machine Vision and Image Processing Conference (MVIP), 2024. **(Paper)**

- **Efficient still image action recognition by the combination of ensemble learning and knowledge distillation**
  Amir Hossein Saleknia, Ahmad Ayatollahi
  IEEE, 9th International Conference on Web Research (ICWR), 2023. **(Paper)**

In Progress

- **MM-UNet: multi-encoder and multi-decoder network for medical image segmentation**
  Amir Hossein Saleknia, Ahmad Ayatollahi
  A manuscript is being prepared for submission to the Journal of **Computers in Biology and Medicine (Elsevier).**

Skills

Programming Languages	Python, Matlab, C, VHDL, LaTeX, Familiar with HTML, CSS, JavaScript
AI Fameworks & Libraries	PyThorch, TensorFlow, OpenCV, NumPy, Pandas, Matplotlib, etc.
Platforms & Tools	Jupyter Notebook, Google Colab, Kaggle, GitHub, etc.

Honors & Awards

- **Ranked 1st** among 40 peer B.Sc. students who chose Control as a subfield at University of Zanjan.
- **Ranked 3th** among 30 peer M.Sc. students of Digital Electronic Systems at Iran University of Science and Technology.
- **Ranked within the top 3%** among approximately 180,000 participants in the National-Wide University Entrance Exam in the Field of Physics and Mathematics for the B.Sc. degree.
- **Ranked within the top 1%** among approximately 15,000 participants in the National-Wide University Entrance Exam in the Field of Electronics for the M.Sc. degree.

Projects

- Design a novel network structure for skin lesion segmentation using deformable attention and multiscale feature aggregation.
- Extensive experiments with action recognition and scene recognition datasets to recognize their unique characteristics.
- Investigating the effectiveness of different knowledge distillation strategies for semantic image segmentation.
- Design and Analysis of fractional-order controller for DC/DC convertors based on Bee Colony optimization algorithm in Matlab.
- Using VHDL to implement various data encryption algorithms, including AES and DES.

Teaching Experience

2019	**Linear Algebra,** Teacher Assistant	*Zanjan, Iran*
2018	**Electronic II ,** Teacher Assistant	*Zanjan, Iran*