

# ALI SALAR

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🏠 Webpage: [parham1998.github.io](https://parham1998.github.io) – Scholar: [Ali Salar](#) – 📞 Phone: +358 417282387

🎂 Birthdate: January 8, 1998 – 📍 Address: Oulu, Finland

## EDUCATION

**University of Oulu** ([World university rankings 2024](#): 344<sup>th</sup>)

📍 Oulu, Finland

Doctoral Researcher at the Center for Machine Vision and Signal Analysis ([CMVS](#))

📅 2024 – Present

- Supervisor: Prof. Guoying Zhao
- Advisee: Dr. Qing Liu

**K.N.Toosi University of Technology** ([World university rankings 2024](#): 451 – 500<sup>th</sup>)

📍 Tehran, Iran

M.Sc. in Computer Engineering - Artificial Intelligence and Robotics

📅 2020 – 2023

- **M.Sc. Thesis:** Automatic Image Annotation using Deep Recurrent Convolutional Networks
- Supervisor: Dr. Ali Ahmadi
- **Cumulative GPA:** 18.02/20 (**US CGPA:** 4/4) - Top **20%** in the graduating class

**K.N.Toosi University of Technology**

📍 Tehran, Iran

B.Sc. in Computer Engineering

📅 2016 – 2020

- **B.Sc. Thesis:** Design and Implementation of Android Apartment Management Application using Web Services
- Supervisor: Dr. Ali Ahmadi
- **Cumulative GPA:** 17.34/20 (**US CGPA:** 3.80/4) - Top **25%** in the graduating class

## FIELDS OF INTERESTS

- **Computer Vision & Image Processing:** *Face Analysis - Generative models - Image Generation / Editing - Deepfake Generation - Image Annotation / Captioning*
- **Natural Language Processing:** *Sentiment Analysis - Machine Translation*

## PUBLICATIONS

- **A. Salar** and A. Ahmadi, “Enhancing high-vocabulary image annotation with a novel attention-based pooling”, **Visual Computer**, Accepted on **22 August 2024**. ([DOI](#) and [Github link](#))
- **A. Salar** and A. Ahmadi, “Improving loss function for deep convolutional neural network applied in automatic image annotation”, **Visual Computer**, Accepted on **12 April 2023**. ([DOI](#) and [Github link](#))

## HONORS AND AWARDS

- Straight M.Sc. of Artificial Intelligence **Admission**, from K. N. Toosi University of Technology (2020)
- Full Tuition Fee **Waiver**, from K. N. Toosi University of Technology (2016 – 2023)

## CERTIFICATIONS

- **Machine Learning Specialization** (3 Courses), [Certificate link](#), 2022
- **Deep Learning Specialization - Sequence Model**, [Certificate link](#), 2021
- **Build Basic Generative Adversarial Networks (GANs)**, [Certificate link](#), 2021

## ACADEMIC AND WORK EXPERIENCE

**Graduate Student Researcher (Full-Time)**

📅 Feb 2022 – Sep 2023

*Intelligent Information Processing Lab*, Supervisor: Dr. Ali Ahmadi

**Data Scientist at Telecommunication Infrastructure Company (Part-Time)**

📅 Aug 2021 – Mar 2022

Analyzing *TIC's* customer churn rate under Dr. Ali Ahmadi's supervision

**Teaching Assistant**

📅 Feb 2020 – Jun 2020

*TA for Computer Networks*, Instructor: Dr. Fatemeh Rezaei

**Head Teaching Assistant**

📅 Feb 2019 – Jun 2020

*TA for Algorithm Design*, Instructor: Dr. Ali Ahmadi

## SELECTED PROJECTS

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### CNN - GCN - LSTM Image Annotation ([Github link](#) - [Github link](#) - [Github link](#))

- *Combination of some recent articles to assess and improve cutting-edge techniques for multi-label classification*
- *State-of-the-art CNNs as feature extractors, along with various Loss Functions*
- *Wasserstein-GAN for data augmentation*
- *Graph Convolutional Network (GCN) to model the label dependencies*
- *LSTM + Attention Mechanism to learn salient features in images*

### LSTM Projects ([Github link](#))

- *Implementation of “name generation”, “emotion classification”, and “date translation” using LSTM architecture*
- *PyTorch*

### Covid-19 Recognition ([Github link](#))

- *Implementation of a pre-trained CNN for the covid-19 recognition from chest X-Ray images*
- *PyTorch*

### Pitch Detection ([Github link](#))

- *Implementation of “short-time autocorrelation”, “short-time AMDF”, and “real cepstrum” for speech pitch detection*
- *Matlab*

### Wumpus Q-Learning ([Github link](#))

- *Implementation of 5x5 Wumpus game using the Q-Learning algorithm*
- *Python and Javascript*

### Pentago mini-max ([Github link](#))

- *Implementation of the Pentago game using the mini-max algorithm and alpha-beta pruning*
- *Java and JavaFX*

## TECHNICAL SKILLS

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**Deep Learning:** Python ([Pytorch](#) - [Tensorflow](#) and [Keras](#) - [Sklearn](#) - [NumPy](#) - [Matplotlib](#)) -  
Neural Networks (CNNs - RNNs - Transformers - GCNs)

**Web and Application Development:** Microsoft asp .net core (C#) for Back-end - **Flutter (dart)** for Apps -  
HTML/CSS, Bootstrap, and JavaScript/jQuery for Front-end

**Programming Languages:** C# - C++ - Matlab - Java/JavaFX - Verilog, VHDL and x86 Assembly (familiar)

**Tools:** Git and Github - Kaggle and Colab - Docker(familiar) -  $\text{\LaTeX}$

## RELEVANT COURSES

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- **PhD:** *Annotation-Efficient Medical Image Segmentation* ([Prof. P. C Yuen](#)) - *Personalization intervention and aging-related mental health* ([Prof. V. Lin](#))
- **M.Sc.:** *Digital Image Processing* (17.8/20 - Dr. H. Abrishami Moghaddam) - *Machine Learning and Advanced Data Mining* (19/20 and 19.5/20 - Dr. A. Ahmadi) - *Neural Networks* (18.25/20 - [Dr. M. Teshnehlab](#))
- **B.Sc.:** *Algorithm Design* (18.5/20 - Dr. A. Ahmadi) - *Computer Networks* (18.5/20 - [Dr. A. Ghasemi](#)) - *Principles of Database Design* (19/20 - Dr. S. Farzi) - *Software Engineering* (18/20)

## LANGUAGE PROFICIENCY

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**Persian:** Native  
**English:** Fluent

## HOBBIES

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[Playing Chess](#) - Playing Volleyball (setter and libero) - Going to Gym - Playing video games - Cooking

## REFERENCES

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**Prof. Guoying Zhao** ([Scholar](#) - [LinkedIn](#))

 Oulu, Finland

- Academy Professor at the Center for Machine Vision and Signal Analysis (CMVS), University of Oulu, Finland
- E-mail: [guoying.zhao@oulu.fi](mailto:guoying.zhao@oulu.fi)

**Dr. Qing Liu** ([Scholar](#) - [LinkedIn](#))

 Oulu, Finland

- Docent (Adjunct Professor) at CMVS, University of Oulu, Finland
- E-mail: [qing.liu@oulu.fi](mailto:qing.liu@oulu.fi)

**Dr. Ali Ahmadi** ([Scholar](#) - [LinkedIn](#))

 Toronto, Canada

- AI Advisor in [York University](#)
- Associate Professor in K. N. Toosi University of Technology, AI Department, Computer Faculty
- E-mail: [ahmadi@kntu.ac.ir](mailto:ahmadi@kntu.ac.ir)

**Prof. Hamid Abrishami Moghaddam** ([Scholar](#))

 Tehran, Iran

- Professor of Biomedical Engineering in K. N. Toosi University of Technology, Electrical and Computer Faculty
- E-mail: [moghaddam@kntu.ac.ir](mailto:moghaddam@kntu.ac.ir)