

# Shahrzad Shashaani

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🔗 <https://shahrzad-sh.github.io/Shahrzad-Shashaani.github.io/>    🌐 <https://github.com/Shahrzad-sh>

## Profile

An enthusiastic and motivated computer scientist who contributes to Artificial Intelligence, Machine Learning, and Deep Learning projects. Experienced and proficient in various programming languages and frameworks relevant to Machine Learning and Deep Learning.

My research interests include Machine Learning, Deep Learning, and Computer Vision in Robotics and Health with supervised and self-supervised learning methods.


## Education

09/2020 – 02/2023

Tehran, Iran

### Master of Science in Artificial Intelligence


*K. N. Toosi University of Technology* 

World University Rankings 2021: 800-1000th, 2022: 1000-1200th 

**GPA:** 4/4 (18.95/20)

**Ranking:** 1st (Among ~25 Students)

**Thesis Title:** Using Convolutional Neural Networks for Off-road Path Detection in Self-driving Cars


**Supervisor:** Prof. Mohammad Teshnehlab 

09/2016 – 09/2020

Tehran, Iran

### Bachelor of Science in Computer Engineering


*K. N. Toosi University of Technology* 

World University Rankings 2021: 800-1000th, 2022: 1000-1200th 

**GPA:** 3.89/4 (18.53/20) / **Last two years' GPA:** 4/4 (19.08/20)

**Ranking:** 3rd (Among ~47 Students)

**Thesis Title:** Hospital Data Analysis Using Nonlinear Regression and Fuzzy Neural Networks

**Supervisor:** Prof. Mohammad Teshnehlab 

## Publications

### Network Intrusion Detection with Limited Labeled Data

Lotfi S, Modirrousta M, **Shashaani S**, Amini S, Aliyari Shoorehdeli M. **Network Intrusion Detection with Limited Labeled Data**. *arXiv preprint arXiv:2209.03147*. 2022.

### Covid-19 Detection based on Blood Test Parameters using Various Artificial Intelligence Methods

Khanjani K, **Shashaani S**, Mehralian S, Jalaeian-Zaferani E, Teshnehlab M, Khodadadian A, Heitzinger C, Nadji A, et al.. **Covid-19 Detection based on Blood Test Parameters using Various Artificial Intelligence Methods**. *Advances in Precision Nutrition, Personalization, and Healthy Aging (Springer)*. 2022;19:506-532.

### Rapid COVID-19 Screening Based on the Blood Test using Artificial Intelligence Methods

Mehralian S, Jalaeian Zaferani E, **Shashaani S**, Kashefinishabouri F, Teshnehlab M, Sokhandan HA, Dibaji Forooshani ZS, Montazer B, Joneidi Z, Vafapeyvand M. **Rapid COVID-19 Screening Based on the Blood Test using Artificial Intelligence Methods**. *Journal of Control*. 2021 Feb 10;14(5):131-140.

## Teaching Experience

02/2023 – present

### Teaching Assistant

*Deep Learning*

Artificial Intelligence Department, K. N. Toosi University of Technology 

Instructor: Prof. Mohammad Teshnehlab [↗](#)

09/2022 – 02/2023  
Tehran, Iran

**Teaching Assistant**

*Neural Networks*

Artificial Intelligence Department, K. N. Toosi University of Technology [↗](#)

**Instructor:** Prof. Mohammad Teshnehlab [↗](#)

02/2022 – 06/2022  
Tehran, Iran

**Teaching Assistant**

*Deep Learning*

Artificial Intelligence Department, K. N. Toosi University of Technology [↗](#)

**Instructor:** Prof. Mohammad Teshnehlab [↗](#)

09/2021 – 02/2022  
Tehran, Iran

**Teaching Assistant**

*Neural Networks*

Artificial Intelligence Department, K. N. Toosi University of Technology [↗](#)

**Instructor:** Prof. Mohammad Teshnehlab [↗](#)

09/2019 – 02/2020  
Tehran, Iran

**Teaching Assistant**

*Algorithm Design*

Computer Engineering Department, K. N. Toosi University of Technology [↗](#)

**Instructor:** Dr. Amin Nikanjam [↗](#)

## Professional Experience

01/2019 – 02/2023  
Tehran, Iran

**Research Assistant**

K. N. Toosi ISLAB(Intelligent Systems Laboratory)

**Main Experience**

- Worked as a member of the COVID-19 diagnosis project
- Worked as a member of the path detection project

**Reference:** Prof. Mohammad Teshnehlab [↗](#)

07/2021 – 07/2022  
Tehran, Iran

**Part-time developer**

Araye Pardaz Limited Company (Software Engineering Startup)

**Main Experience**

- Learning how to work in an Agile environment during the software development phase
- Developing a basic database
- Developing Admin panel

12/2021 – 06/2022  
Tehran, Iran

**Part-time Developer**

TelC International Communication Company [↗](#)

**Main Experience**

- Developing some parts of an existing database using MySQL
- Finding and extracting useful information from registered records
- Developing a simple recommender system for defined customer care app using Python

09/2020 – 12/2021  
Tehran, Iran

**Team Member of SR2119 Social Robot Developing Project**

AICell Startup [↗](#)

**Main Experience**

- Machine Vision
  - Face Detection and Recognition
  - Face Tracking
  - Age-Gender Estimation

**Catalog Link:** SR2119 Robot [↗](#)

**Reference:** Mr. Sajjad Amini [s\_amini@sharif.edu]

06/2019 – 09/2019 Tehran, Iran	<b>Internship</b> Assessment of Electronic Health Record System of Iran Health Organization, Iran Telecommunication Research Center(ITRC) <a href="#">↗</a> <b>Main Experience</b> <ul style="list-style-type: none"> <li>• Testing Electronic Health Record System (SEPAS)</li> <li>• Developing Record Comparator Tool with Python</li> </ul> <b>Reference:</b> Mr. Mohammad Azadnia [azadnia@itrc.ac.it]
06/2018 – 09/2018 Tehran, Iran	<b>Part-time Developer</b> Android Application, Arena Group <b>Main Experience</b> <ul style="list-style-type: none"> <li>• Developing Android Program for Students Curriculum Management</li> </ul> <b>Download Link:</b> Sakoo App <a href="#">↗</a>

## Courses

### Master

- Machine Learning (4/4)
- Deep Learning (4/4)
- Machine Vision (4/4)
- Evolutionary Computing (4/4)
- Multi-agent Systems (4/4)
- Pattern Recognition (3/4)

### Bachelor

- Foundations of Computer Vision (4/4)
- Graph Theory and Algorithms (4/4)
- Embedded and Real-Time Systems (4/4)
- Data Structure (4/4)
- Database (4/4)
- Algorithm Design (3/4)
- Artificial Intelligence and Expert Systems (3/4)

## Honors, Awards and Grants

2020 – 2022	<b>Ranked 1st (out of ~25 Students)</b> MSc Degree, Artificial Intelligence Department, K. N. Toosi University of Technology
2020 – 2022	<b>Received Full Tuition Fee Waiver Scholarship</b> <i>K. N. Toosi University of Technology</i>
2020	<b>Credited for M.Sc. Degree</b> K. N. Toosi University of Technology
2020	<b>Won the 3rd Place in the Problem Solving Competitions of Shahid Babaei Project</b> Smartization Field, Iran National Elite Foundation (Rah Neshan)
2018 – 2020	<b>Included in Dean's List for 3 Semesters</b> K. N. Toosi University of Technology
2017 – 2020	<b>Received Excellent Students Scholarship, Kanoon Farhangi Amoozesh</b> K. N. Toosi University of Technology
2016 – 2020	<b>Ranked 3rd (Out of ~53 Students)</b> BSc Degree, Computer Engineering Department, K. N. Toosi University of Technology

2016 – 2020	<b>Received Full Tuition Fee Waiver Scholarship</b> K. N. Toosi University of Technology
2016	<b>Ranked within the top 1% of Iranian University Entrance Exam for Bachelor's Degree</b>
2012	<b>Won the 2nd place in the Karate(Kata) championship in provincial competitions</b>

## Projects

2020 – 2022	<b>Using Convolutional Neural Networks for Off-road Path Detection in Self-driving Cars</b> <i>The Master's Thesis</i> <ul style="list-style-type: none"> <li>Using off-road dataset (Freiburg Forest Dataset)</li> <li>Developing a layer-wise train for CNNs</li> <li>Using BEL (Brain Emotional Learning) architecture</li> </ul>
2021	<b>Edeg detection using PiDiNet</b> <i>Final project of Machine Vision</i> <ul style="list-style-type: none"> <li>Inspired by an article named pixel difference networks for efficient edge detection <a href="#">↗</a></li> <li>PiDiNet was a Deep CNN which uses both traditional edge detection operators and Convolutional operations at the same time.</li> </ul>
2020	<b>Hospital Data Analysis Using Nonlinear Regression and Fuzzy Neural Networks</b> <i>The Bachelor's Thesis</i> <ul style="list-style-type: none"> <li>Using blood test results for COVID-19 detection</li> <li>Speeding up the process and reducing the price of COVID-19 detection</li> </ul>
2020	<b>Persian-Handwriting-Recognition tool for a specific type of form</b> <i>Final project of Computer Vision course</i> <ul style="list-style-type: none"> <li>Collecting a small dataset of Persian handwritten letters and digits</li> <li>Detecting information parts of the form using OpenCV contours</li> <li>Training two separate CNNs to classify handwritten Persian letters and digits</li> <li>Giving extracted contours to trained CNNs and showing predicted results</li> </ul>

## Skills

### Deep Learning Libraries and Frameworks

Pytorch/ TensorFlow/ Keras

### Machine Learning Libraries and Frameworks

scikit-learn / OpenCV / Dlib / mediapipe

### Programming Languages and Tools

Python / MATLAB / Weka / C / C++ / Java

### Other Libraries and Frameworks

Numpy / Pandas / Matplotlib

### Computer Engineering

Git / Linux / Agile Development

### Database

MySQL / Microsoft SQL Server

## Languages

### Engilsh

IELTS: 7.5 (Speaking:7 | Listening:7.5 |  
Reading:8.5 | Writing:6.5)

### Persian

Native

### Arabic

Elementary proficiency

## References

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**Dr. Mohammad Teshnehlab**, *Professor*, K. N. Toosi University of Technology, Tehran, Iran  
teshnehlab@eetd.kntu.ac.ir, (+98)-021-84062323

**Dr. Babak Nasersharif**, *Assistant Professor*, K. N. Toosi University of Technology  
bnasersharif@kntu.ac.ir, (+98)-021-84062268

**Dr. Saeed Farzi**, *Assistant Professor*, K. N. Toosi University of Technology  
saeedfarzi@kntu.ac.ir, (+98)-21-84062-414

**Dr. Ali Ahmadi**, *Associate Professor*, K. N. Toosi University of Technology  
ahmadi@kntu.ac.ir

## Interests

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Working out, Drawing, Watching movies and TV series, Listening to music or podcast