

# Mohammad Amin Parchami Araghi

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🇮🇷 Nationality: Iranian  
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## Education

Oct 2021 – Now MSc, Visual Computing, Saarland University  
**Selected Courses:** Image Acquisition Methods (1.3), Advanced Image Analysis (1.7), Computer Graphics (1.7)  
Sep 2017–Jul 2021 BSc, Computer Engineering, K. N. Toosi University of Technology,  
Cumulative GPA: **18.70/20** (US CGPA: **3.92/4**), Ranked **5<sup>th</sup>** in class of 75  
**BSc Thesis:** Monocular 3D Vehicle Detection on Road Scenes **Supervisor:** Dr. Behrooz Nasihatkon  
**Referee:** Dr. Ali Ahmadi **Grade:** 20/20 **Code:** click here.

## Fields of Interests

**General** Artificial Intelligence, Computer Vision, Machine Learning, Image Processing.  
**Specific** Both Model-based and Deep-learning-based 2D & 3D Object Detection and Tracking, Autonomous Driving, Video Analysis, Human Activity Recognition, Optical Flow Estimation, 3D Reconstruction, Visual Odometry, Image Segmentation, Generative Networks.

## Honors and Awards

Sep 2018–Jul 2019 **Dean's List**, second year of study.  
Sep 2018–Jul 2020 Excellent Students **Scholarship**, from Kanoon Farhangi Amooozesh.  
Sep 2017–Jul 2021 Full Tuition Fee **Waiver**, from K. N. Toosi University of Technology.

## Technical Skills

Languages	Python, C++, Java, x86 Assembly.
Libraries and Frameworks	OpenCV, Numpy, Tensorflow 1.x & Keras, Scikit-learn, Gstreamer, Nvidia DeepStream, Nvidia VPI, SimpleITK.
Programming	Object Oriented and Functional Programming, OOP Design Patterns.
Concepts	Model Quantization, SIMD Programming, Dynamic Programming, Async Programming
Essentials	Docker, Version Control Systems such as Git and GitHub, Agile Project Management with Scrum, Jira & Confluence, CMake, Tmux, Basic Bash Scripting.
Image Processing	Morphological Operations, Image Transformation and Registration.
Computer Vision	Real-time Multiple Object Detection and Tracking, Background Subtraction, Feature Extraction and Matching, Camera Calibration and Geometry.
Linux Distros	Ubuntu.
Familiar Boards	Jetson Xavier, Raspberry Pi 4.
IDEs and Editors	PyCharm, IntelliJ IDEA, GNU Emacs.

## Language

Farsi (Native), English (Professional Proficiency, C1), German (Beginner, A1)

### TOEFL iBT

January-9 2020 Total: **106** | Reading: 29 | Listening: 28 | Speaking: 25 | Writing: 24

## Academic Experience

### At K. N. Toosi University of Technology

Spring 2021	Head Teaching Assistant, <b>Fundamentals of Computer Vision</b> , Instructor: Dr. Behrooz Nasihatkon.
Fall 2020	Teaching Assistant, <b>System Analysis and Design</b> , Instructor: Dr. Mehdi Esnaashari.
Fall 2019	Head Teaching Assistant, <b>Fundamentals of Programming</b> , Instructor: Dr. Behrooz Nasihatkon.
Fall 2019	Head Teaching Assistant, <b>Assembly and Machine Language</b> , Instructor: Dr. Behrooz Nasihatkon.
Spring 2019	Teaching Assistant, <b>Assembly and Machine Language</b> , Instructor: Dr. Behrooz Nasihatkon.
Spring 2019	Teaching Assistant, <b>Advanced Programming with Java</b> , Instructor: Dr. Mehdi Esnaashari.
Fall 2018	Teaching Assistant, <b>Fundamentals of Programming</b> , Instructor: Dr. Behrooz Nasihatkon.

### Others

Summer 2019	Course Instructor, <b>Programming with Java</b> , Alzahra University, Tehran, Duration: 30 Hours.
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## Work Experience

Feb 2021 - Oct 2021	Computer Vision Engineer at <b>Sensifai</b> , Belgium, (remote). <i>My primary focus was on optimizing video processing pipelines on Jetson. For instance, applying some of the transformations in a zero-copy manner with a custom DeepStream plugin in C++.</i>
Nov 2019 - Sep 2020	Computer Vision Intern at <b>Rahbin Sanat Nasir</b> , Iran. <i>Mostly worked on the FCW module of our low-cost ADAS solution. My primary focus was on enhancing object detection and tracking accuracy and lowering inference time.</i>

## Projects

### Related coursework projects

July 2020	Persian form reader   Fundamentals of Computer Vision
June 2020	Object detection using background subtraction and morphology on FPGA   Digital System Design
January 2020	Adding and filtering image noise using SystemC   Hardware Software Co-design
June 2019	Implementing Voronoi diagram using Java   Algorithm Design
January 2019	Image blending using x86 Assembly   Assembly and Machine Language

### Personal projects

Under Development	Light Pen   Pen tip recognition and light pen simulation using computer vision.
Under Development	Green Screen   Green screen effect using background subtraction and morphology.
March 2020	Magic Webcam   A virtual webcam for streaming processed images to any other application.

## Certificates

### Verified certificates from Coursera online MOOC platform

November 2019	Structuring Machine Learning Projects   deeplearning.ai
October 2019	Hyperparameter tuning, Regularization, and Optimization   deeplearning.ai
September 2019	Neural Networks and Deep Learning   deeplearning.ai

### Other certificates

September 2019	Advanced Deep Learning   KNTU ACM Student Chapter.
July 2019	Fundamentals of Deep Learning   KNTU ACM Student Chapter.
October 2018	Javacup Certified Java Programmer   Javacup Association.

### Audits

Spring 2019	Introduction to Computer Vision   Georgia Tech   Udacity Online Platform
Fall 2019	Introduction to Reinforcement Learning by David Silver   UCL   DeepMind

## **Hobbies**

Playing and Listening to Piano, Listening to Self-development Podcasts and Talks, Documentaries, Hiking.