

Seyed Shayan Daneshvar

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Education

Jan 2023– present MSc, Computer Science, University of Manitoba, GPA: N/A, **Supervisor:** Dr. Lorenzo Livi
Note: My supervisor canceled his appointment with UofM due to a family crisis, and I could not find another supervisor with similar interests with an open position at UofM. Therefore; I decided to apply to other universities and only do two courses here in the current semester, and possibly transfer their credit to the next university.
Courses: Advanced Data Mining, Data-driven Software Engineering.

Sep 2018– Aug 2022 BSc, Computer Engineering, K.N. Toosi University of Technology,
Cumulative GPA: **19.21/20** (US CGPA: 4/4, **A+**), Ranked **2nd** in class of **76**
BSc Thesis Title: Reflection Removal of In-vehicle Images (19.5/20) **Supervisor:** Dr. Nasihatkon
Selected Courses: Advanced Programming, Discrete Mathematics, Algorithm Design, Fundamentals of Computer Vision, Databases, Software Engineering II, AVR Assembly, Differential Equations, Numerical Methods, Compiler Design, Hardware & Software Codesign, Foundations of Natural Language and Speech Processing, Internet Engineering. (all grades 20/20)
Software Engineering I (19.9/20), Linear Algebra (19.9/20), Operating Systems (19.75/20), Theory of Languages & Automata (19.75/20), Computer Structure & Language (19.65/20), Engineering Mathematics (19.5/20), Programming Fundamentals (19.29/20).

Sep 2014– June 2018 High School Diploma, GPA: 19.39/20, Nemoone Allameh Helli high school in Shahrud

Fields of Interests

- Machine Learning, Computer Vision & Graphics, Image Processing, Recommender Systems
- Software Engineering, Software Architecture, Distributed Systems, Databases, Big Data & Data Mining

Honors and Awards

Dec 2022– present **Supervisor's Fellowship**, \$20000, University of Manitoba. (From Dr. Lorenzo Livi)
Aug 2022– present **University of Manitoba Graduate Fellowship (UMGF)**, \$28000, University of Manitoba.
Aug 2022– present **International Graduate Student Entrance Scholarship**, \$5400, University of Manitoba.
Aug 2022 Straight MSc. in Artificial Intelligence **Admission Offer**, Sharif University of Technology.
Sep 2019– July 2020 **Dean's List Inclusion**, Computer Engineering Faculty's Dean, K. N. Toosi University of Technology.
Sep 2018– July 2022 Full Tuition Fee **Waiver**, from K. N. Toosi University of Technology.
Aug 2018 Ranked within the **Top 1%** Nationwide University Entrance Exam.

Work Experience

May 2022– Dec 2022 Senior Software Engineer, **Java Backend Developer**, Mahsan Co.
Nov 2021– May 2022 Software Engineer, **Java & Kotlin Backend Developer**, Tosan Soha
May 2021– Nov 2021 Software Engineer, **Java Backend Developer**, Pinket
June 2019– Sep 2019 Intern, **Backend Web Development**, Mapsa HR

Academic Experience

July 2021– July 2022	Undergraduate Research Assistant, Computer Vision , KNTU, Supervisor: Dr.Behrooz Nasihatkon
Sep 2021– Feb 2022	Teaching Assistant, Database Design , KNTU, Instructor: Dr.Saeed Farzi
Feb 2021– July 2021	Head Teaching Assistant, Operating Systems , KNTU, Instructor: Dr.Hamed Khanmirza
Feb 2021– July 2021	Head Teaching Assistant, Algorithm Design , KNTU, Instructor: Dr.Ali Ahmadi
Sep 2019– Aug 2020	Head Teaching Assistant, Advanced Programming , KNTU, Instructor: Mehdi Zamanian

Teaching Experience

June 2022– Nov 2022	Instructor, Spring Cloud, Spring Framework, and Microservices Architecture , Mahsan Co.
Jan 2020– May 2021	Instructor, Java Core & Backend Web Development , Mapsa HR

Publications

The following will be published soon:

Yasaman Razeghi, Behrooz Nasihatkon, **Seyyed Shayan Daneshvar**, Shahram Seidi, Mahshid Manouchehri. 2023. A new electrically assisted paper-based lab-on-a-chip platform for on-site barcode analysis of phenazopyridine from urine. Submitted to *ChemistrySelect Journal*, Waiting for Acceptance. Related to the **Visual Concentration Estimation** project.

Neda Rezaei, Behrooz Nasihatkon, Shahram Seidi, **Shayan Daneshvar**, Mina Fotouhi. 2023. Determination of three heavy metals via on-chip electromembrane extraction followed by a barcode readable assay and a linear regression RGB analysis with a customized smartphone app. Will be Submitted in a Q1 or Q2 Chemistry Journal in less than 4 months. Related to the **Visual Concentration Estimation** project.

Technical Skills

Languages	Java, Python, C#, Kotlin, C++, X86 & AVR Assembly, Javascript & Typescript.
Programming Concepts	Object Oriented and Functional Programming, GoF Design Patterns, AOP, Dynamic Programming, Algorithms & Data Structures, Relational SQL & NoSQL Databases, Concurrency and Parallelism, Async Programming, Event Driven Programming, MVC, TDD, Web Development, Microservices Architecture & Patterns, Basic Android Development, Neural Networks (ANN, CNN), Fundamentals of Machine Learning, Fundamentals of Computer Vision & Image Processing, Agile Software Development & Project Management (Scrum & Kanban)
ML/CV Frameworks & Libraries	Tensorflow, PyTorch, Keras, Tensorflow Lite, DeepLearning4J, OpenCV, Scikit-Learn, Numpy, SciPy, Pandas.
Web Frameworks	Spring Framework(MVC, Webflux, Cloud, Security, Data, Boot), Angular 2+, Fast API.
Tools	LaTeX, Git, Gitlab & Github, Docker, Docker Compose, Nginx, Kafka, Flyway.
IDEs	IntelliJ IDEA, Pycharm, Visual Studio, Android Studio, Apache NetBeans.
Databases	MySQL, Postgres, YugabyteDB, MS Server, MongoDB, Cassandra, SQLite.
Other Libraries	Hibernate, JUnit, Mockito, Lombok, MapStruct, JavaFX & WPF, Maven.
Operating Systems	Windows, Linux (Debian, CentOS, Ubuntu, PopOS, Alpine).

Language

Farsi (Native), English (Professional Proficiency - C1)

TOEFL iBT

Sep 2021– Sep 2023 Total: **100** | Reading: 22 | Listening: 30 | Speaking: 22 | Writing: 26

Projects

Important Coursework Projects

June - July 2021

BSc Thesis, Reflection Removal of In-vehicle Images

Role: Developer & Researcher | Computer Vision | Professor: Dr. Behrooz Nasihatkon

In this project, I had to build and train a deep learning model that could remove or decrease the effect of the reflections of in-vehicle images in a way that the end result would look natural.

First, I used a dataset of real-world streets and road images (from CamVid dataset) and synthesized a new dataset with reflections of various objects. Then, I came up with a CNN that resembled the original U-Net neural network but with 3-channels for each pixel in the output. Finally, I trained various similar networks with different depths and kernel sizes to get to the final solution which could remove most reflections and restore the original image section behind the reflection.

June - July 2021

Soccer Player Detection & Classification

Role: Developer | Computer Vision | Professor: Dr. Behrooz Nasihatkon

In this project, I had to detect & classify players & referees from a recorded soccer match & then draw their locations & color on an artificial soccer field. In order to detect the players & the referee, I used the KNN background subtraction algorithm with basic morphology techniques. I also used a transform to get the exact location on a birds-eye view field.

Oct 2020–Feb 2021

Dapixi.ir

Role: Product Owner & Developer | Software Engineering | Professor: Dr. Mehdi Esnaashari

Dapixi is a free photo sharing website. Responsibilities: back-end web development in Java, minor bug fixes in the Angular front-end, and development of the content-based & collaborative filtering photo recommender systems in Python.

Jun – Feb 2021

Implementation of PSO Algorithm in SystemC & C++

Role: Developer | Software & Hardware Codesign | Professor: Dr. Atena Abdi .

Apr – July 2020

Database & Web Application Design of a Website

Role: Developer | Databases | Professor: Dr. Saeed Farzi .

Database Design & Fullstack web development of a website similar to divar.ir.

Other Major Projects

July 2021 – July 2022

Visual Concentration Estimation

Role: Android & Python Developer, Researcher | Supervisor: Dr. Behrooz Nasihatkon

Detection of linear and QR barcodes including chemicals with CNNs, concentration estimation using linear and log-linear regressors, and outlier detection with PCA.

June – Sep 2021

Chibaladi.com

Role: Developer, Project Manager

Backend design & development of the chibaladi website.

Certificates

September 2021

From Shallow to Deep Learning | ISMVIP.

August 2021

Fundamentals of Reinforcement Learning | IEEE KNTU Student Branch.

October 2019

Java Web Developer Certificate | Javacup Association.

Mar 2019 – present

Over 24 other certificates in various fields, mostly in Software Engineering | LinkedIn Learning.

References

Dr. Lorenzo Livi

Associate Professor, Department of Computer Science, University of Manitoba.

My previous MSc supervisor, Email: Lorenzo.Livi@umanitoba.ca

Dr. Behrooz Nasihatkon

Assistant Professor, Department of Computer Engineering, K. N. Toosi University of Technology.

My BSc thesis supervisor, Email: nasihatkon@kntu.ac.ir

Dr. Babak Nasersharif

Assistant Professor, Department of Computer Engineering, K. N. Toosi University of Technology.

My BSc thesis referee, Email: bnasersharif@kntu.ac.ir