# Zahra Soukhtedel

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## Education

### Bachelor of Science in Computer Science (Sep. 2019 - Feb. 2024)
**Sharif University of Technology (#1 in Iran)** (Tehran, Iran)

- **Project Title:** 3D Medical Image Segmentation (Under the Supervision of Dr. Tefagh)
- **GPA:** 17.98 Out of 20.0 (ranked among the top 16 students in my major)

### High School Diploma in Mathematics and Physics (Sep. 2016 - Jun. 2019)
**National Organization for Development of Exceptional Talents** (Tehran, Iran)

- **GPA:** 19.67 Out of 20.0 (4.0 Out of 4.0) - ranked first in my school

## Research Interests

- Deep Learning
- Medical Image Analysis
- Computer Vision
- NLP
- AI in Healthcare

## Research Experiences

- **Research Assistant** in a Project Entitled *"3D Medical Image Segmentation using X2CT and MedSAM models"* Under the Supervision of Dr. Tefagh, at **Sharif** University of Technology, Tehran, Iran.(Feb. 2023 - Feb. 2024). I worked on improving the medical segmentation in 3D Medical Images(CTs) by combining the Segment Anything in Medical Images(MedSAM) and NeRFs. I was also working on the idea of using X-rays to construct CTs.
- **Research Assistant (Remote)** in the Projects Below, Under the Supervision of Dr. Firouzi, at **Duke** University. (Nov. 2023 - Mar. 2023). I worked on Improving ASR Models(Wav2Vec 2) for the Persian Language. and also on the project to design model (RAG + ViT) for question answering and search in movies and TV series using an input prompt.

## Work Experiences

- **Data Scientist** AI & Bigdata team at Digikala (Leading E-Commerce platform in Iran). (Feb. 2024 - present)
  - Collaborated on designing and developing an AI shopping assistant at Digikala, aimed at enhancing customer experience and streamlining the shopping process.
  - Enhancing platform search results by identifying the product category users are seeking, using a fine-tuned CLIP model to vectorize product titles, retrieving relevant items, and determining the desired category based on the results.
  - Implementing image-based search by distilling the image encoder from the large CLIP EVA model onto OpenAI's CLIP image encoder, encoding all product images, and leveraging vector databases like Qdrant for efficient search.
  - Analyzed search, click, and order data to identify patterns in repeat purchasing behavior.

## Teacher Experiences

- Teacher Assistant in *"Machine Learning"* (graduate) Course at Sharif University of Technology. (Spring 2024), Instructor: Dr. Motahari, I have assisted in defining and implementing the project, and grading assignments.
- Teacher Assistant in *"Machine Learning"* Course at Sharif University of Technology. (Spring 2024), Instructor: Dr. Seyyedsalehi, I helped with defining and implementing the project, grading and interviewing students
- Teacher Assistant in *"Network"* Course at Sharif University of Technology. (Spring 2024), Instructor: Dr. Mizanian.
- Teacher Assistant in *"Machine Learning"* Course at Sharif University of Technology. (Fall 2023), Instructor: Dr. Motahari, Assisted in grading assignments, conducting TA sessions, and preparing course notes.
- Teacher Assistant in *"Information Theory"* Course at Sharif University of Technology. (Fall 2023), Instructor: Dr. Ebrahimi, I helped with designing course assignments and grading.
- Teacher Assistant in *"Basic Programming"* Course at Sharif University of Technology. (Spring 2023), Instructor: Dr.Shahraki, I helped with designing course assignments.
- Teacher Assistant in *"Formal Languages and Automata Theory"* Course at Sharif University of Technology. (Fall 2021), Instructor: Dr. Daneshgar. I helped with the assignment and contributed to a publication containing the solutions for challenging questions.

## Languages

- **Persian** (Native)
- **English** (TOEFL: 99) - (R:26, L:29, S:20, W:24)
- **French** (beginner)

## Projects

- **Machine Learning Course Assignments and Project**
- **Deep Learning (Graduate) Course Assignments**
- **Neuroscience (Graduate) Course Assignments**
- **Bioinformatic Course Assignments**
- **Intelligent Analysis of Biomedical Images (Graduate) Course Assignments**
- **Regression (Graduate) Assignments**
- **Advanced Programming Course Project**
- **Database Course Assignments**

## Achievements

- Ranked among the top undergraduate students in GPA within the Department of Computer Science at Sharif University.
- Ranked within the top 0.3 percentile in the nationwide university entrance exam for B.Sc. admission, +150k participants.
- I passed the first stage of in the Iran national Mathematical and Computer Science Olympiad.

## Core Skills

**Programming and Scripting:**

- Python | Java | R | MATLAB | MIPS | PostgreSQL | MySQL | PySpark

**Machine Learning and Data Science:**

- PyTorch | NumPy | OpenCV | TensorFlow | Scikit-learn | Pandas | Langchain | Qdrant

**CAD and Documentation:**

- AutoCAD | LaTeX

**Others:**

- Git | HTML

## Soft Skills

- Innovation and Creativity
- Teamwork and Collaboration
- Critical Thinking
- Adaptability and Resilience