

Mohammadreza Hassanzadeh

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EDUCATION

Master of Science in Materials Science and Engineering

2024 – Present

Department of Materials Science and Engineering, École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland

Bachelor of Science in Computer Engineering (Artificial Intelligence)

2020 – 2024

Department of Computer Engineering, Amirkabir University of Technology (AUT), Tehran, Iran

GPA: 3.9/4 (18.44/20) via 142

- Second Field of Study (Privilege for Excellent Students)

Bachelor of Science in Materials Science and Metallurgical Engineering

2018 – 2023

Department of Materials and Metallurgical Engineering, Amirkabir University of Technology (AUT), Tehran, Iran

GPA: 4/4 (18.95/20) via 144 credits

ACADEMIC EXPERIENCES

Research Experiences

Dep. of Materials Science and Engineering, École polytechnique fédérale de Lausanne (EPFL)

Aug 2024 – Present

- **Laboratory of Semiconductor Materials**

Characterization of Zn_3P_2 epitaxy coated on Graphene

- Conducting Photoluminescence Spectrometry experiments.
- Analyzing the emissions of each section of the film using python and Hyperspy
- Performing Cathodoluminescence Spectrometry and Electron Microscopy

Dep. of Computer Engineering, Amirkabir University of Technology

Jul 2023 – Jul 2024

- **Artificial Intelligence Lab**

Developing a model for classifying different images from material characterizations under the supervision of Dr. Mahdi Javanmardi.

- Developing article crawlers and extracting images from them using python libraries
- Using transfer learning algorithms and convolutional neural networks to classify various images from articles

Dep. of Materials and Metallurgical Engineering, Amirkabir University of Technology

Feb 2021 – Jun 2024

- **Nanomaterials Laboratory**

Synthesis and characterization of silver nanoparticles for detecting L-Histidine. under the supervision of Dr. Davoud Haghshenas Fatmehsari.

- Conducting UV-spectrophotometer experiments and performing comprehensive data analysis.
- Exploring the synthesis of various morphologies of silver nanoparticles.
- Employing machine learning algorithms with python libraries to propose a model for the one-step detection of L-Histidine concentration using just UV-spectra.

PUBLICATIONS

“Selective colorimetric sensing of histidine in aqueous media via Ag nanotriangles in the presence of $HgCl_2$ ”, N. Namazi, D. Haghshenas, S. Firoozi, **M. Hassanzadeh**, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Aug 2024, doi.org/10.1016/j.saa.2024.125072

“A Machine Learning Approach for Modelling L-Histidine Detection by Plasmonic Ag Nanoparticles Based on UV-Vis Spectrophotometry”, **M. Hassanzadeh**, D. Haghshenas, S. Firoozi, Under Preperation

SKILLS

Programming and Softwares:

- C, C++, Java, Python, R
- Libraries: Numpy, Pandas, Sci-kit learn, Scipy, Tensorflow, Keras, Matplotlib
- Softwares: Design Expert, HSChemistry, Xpert HighScore
- Operating Systems: Windows, Linux (Ubuntu), MacOS

Test scores:

- TOEFL IBT Score: 102

ACHIEVEMENTS AND AWARDS

- Ranked 1st among the graduation class of 2022 in the Department of Materials and Metallurgical Engineering
- Accepted into Iran's National Organization for Development of Exceptional Talents.
- Ranked within the top 2 % in the university entrance exam among around 150,000 participants
- Exempted from M.Sc. university Entrance exam as an exceptional-talent student from Sharif University of Technology, Tehran University and Amirkabir University of Technology.

VOLUNTARY EXPERIENCES

- Secretary of Union of Materials Engineering Scientific Societies Jul 2022 – Feb 2022
- Member of Scientific Association of Materials and Metallurgical Engineering Nov 2021 – Sep 2022
- Editor of Kaveh collegiate magazine Sep 2020 – August 2021

EXTRACURRICULAR ACTIVITIES

- Working as a python teacher and content supervisor at Yasan Academy Code Club Jan 2020 – Sep 2021
– Designing and mentoring a 4-month advanced Python programming course for children and teenagers.
- Member of Amirkabir University of Technology's volleyball team (setter) at 15th Iran's Sports Olympiad of University Students Jun 2022
- Tombak (Iranians traditional percussion instrument) musician 2012 – Present

REFERENCES

Davoud Haghshenas Fatmehsari, Associate Professor

Department of Materials and Metallurgical Engineering, Amirkabir University of Technology

Email: dahafa@aut.ac.ir

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Sadegh Firoozi, Associate Professor

Department of Materials and Metallurgical Engineering, Amirkabir University of Technology

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Contact Number: +9821 64542991

Mahdi Javanmardi, Assistant Professor

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