Hesamoddddin Haddadadel

(+82) 10-6830-7220 | hesamhaddad@gm.gist.ac.kr

Education

Master of Science: Mechanical and Robotics Engineering (candidate) 09/2025 – Present

Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea

Department of Mechanical Engineering and Robotics Engineering; HUR Group (BioMechatronics Lab)

Bachelor of Science: Mechanical Engineering 2018–2023

University of Tehran, Tehran, Iran

GPA: 3.2   Subdiscipline: Control Engineering

B.Sc. Thesis (92.5/100): **Knee & femur joint angle estimation based on mechanical & electromyographic measurements for active control of transfemoral prostheses** –IEEE Xplore

Research Interests

Digital control, robotics, reinforcement learning, multimodal learning, vision–language–action models, game theory, optimization

Publications

Published December 2023

H. Haddadadel, A. Yousefi-Koma, M. Asgharzadeh, "**Knee & femur joint angle estimation based on mechanical & electromyographic measurements for active control of transfemoral prostheses.**" [DOI]

2023 11th RSI International Conference on Robotics and Mechatronics (ICRoM)

Research Experience

HUR Group (BioMechatronics Lab), GIST 09/2025 – Present

Department of Mechanical Engineering and Robotics Engineering, GIST, Gwangju, South Korea

Project: Upper-limb rehabilitation with lingual human–robot interface

- Develop large language model-based software for a tongue-operated (lingual) interface in an upper-limb rehabilitation system.
- Collaborate within a multidisciplinary team on human–robot interaction and assistive robotics.

Center of Advanced Systems and Technologies (CAST) 05/2023 – 09/2023

Department of Mechanical Engineering, University of Tehran

Supervisor: Dr. Aghil Yousefi-Koma

Project: **Knee & femur joint angle estimation based on mechanical & electromyographic measurements for active control of transfemoral prostheses** (more info)

- Developed a lightweight multilayer neural network to estimate knee and femur joint angles for use as reference input in active prosthetics.
- Performed sensor logging, data analysis, and feature extraction from mechanical and electromyographical measurements.

University of Tehran in collaboration with Taleghani Hospital 07/2023 – 11/2023

Supervisor: Dr. Mohammad Khoshnevisan

Project: **Ensemble model development for diagnosis of fatty liver grades based on blood test results, demographic and anthropometric data**

- Built an ensemble model including deep neural networks, gradient-boosted decision trees, and statistical models.

University of Tehran, Department of Mechanical Engineering 2022

Supervisor: Dr. Mohammad Khoshnevisan

Project: **Neural network regression of mechanical characteristics of alloys**

- Designed and trained neural network architectures to model the highly non-linear relation between alloy composition and resulting mechanical characteristics.

Working Experience

Software Developer 02/2024 – 05/2025

RavanErtebat Co.

Deployment and maintenance of resource-intensive AI models on server back-end.

- Deployed and maintained transformer-based and large language models in production back-end services.
- Explored Kubernetes administration and infrastructure design as part of DevOps responsibilities.

Machine Vision Intern Summer 2022

Irankhodro Powertrain Co.

Part of a development team focused on autonomous features for vehicles.

- Responsible for intelligent model architecture and deployment for live object detection.

Teaching Experience

Teaching Assistant – Artificial Intelligence 09/2022 – 07/2023

Department of Mechanical Engineering, University of Tehran

Lecturer: Dr. Mohammad Khoshnevisan

- Taught linear algebra, neural network basics, convolutional neural networks, reinforcement learning, unsupervised learning, decision trees , etc.
- Assisted in delivering an English-language course for over 50 students.

Teaching Assistant – Dynamics 06/2022 – 09/2022

Department of Mechanical Engineering, University of Tehran

Lecturer: Dr. Farzad Ayatollahzadeh Shirazi

English Teacher 2022

Parseek English Institute

- Over 200 hours of experience teaching English to children and teenagers.

Skills

Programming: Python, C#, C++, Go, MATLAB, Markdown, Latex, EES

DevOps: Kubernetes administration, infrastructure design

Machine Learning & Quantum Computing: TensorFlow, PyTorch, transformer-based and large language models, Qiskit, TensorFlow Quantum

Engineering Tools: FEM analysis (ABAQUS), part design (SolidWorks)

Honors & Certificates

Top Grades in Undergraduate Study September 2023

Engineering Mathematics (90/100), Statistics and Probability (95/100), Calculus 2 (91.25/100), Artificial Intelligence (93.75/100)

IELTS Test February 2023

Overall score: 8

National University Entrance Exam (Konkour) 2022

Ranked 315th among 144,000 participants in the Iranian University Entrance Exam (top 0.2%).

Data Science & Machine Learning Course 2020

Dayche Data Solutions Group

References

Prof. Pilwon Hur

Associate Professor, School of Mechanical Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea

pilwonhur@gist.ac.kr, Website

Prof. Aghil Yousefi-Koma

Professor, School of Mechanical Engineering, University of Tehran, Tehran, Iran

aykoma@ut.ac.ir, Website