

Education

Master of Computer Science
UNIVERSITY OF NEW BRUNSWICK

Fredericton, NB, Canada

Bachelor of Computer Engineering
SHAHID BEHESHTI UNIVERSITY

Tehran, Iran

Experience

Human-Robot Interaction Laboratory
RESEARCH ASSISTANT

UNB, Fredericton, Canada

September 2023 - Present

Interface Design and User Experience: Applied UI/UX principles to teleoperation interfaces, enhancing user performance and experience. Developed and implemented automation for robot network configuration to streamline operations.
Research and Experimentation: Conducted research involving the gathering and analysis of empirical data. Designed scientific experiments adhering to computer science and psychology standard. Authored academic reports used in publications and presentations to disseminate findings.

Technical Development: Developed the teleoperation interface and robot operations using Python3, integrating ROS and Tkinter for efficient functionality.

Algorithms Design and Analysis
TEACHING ASSISTANT

UNB, Fredericton, Canada

January 2025 - Present

Instructor: Huajie Zhang; Responsible for marking and reviewing assignments

Robotics Laboratory
RESEARCH ASSOCIATE

SBU, Tehran, Iran

July 2021 - Present

Applied Reinforcement Learning, and Data Mining principles to Soccer Simulation 2D League for RoboCup Competitions to analyze and improve team performance

Applied the same principles in addition to Obstacle avoidance, and Navigation algorithms to develop A.I. for SBU Omni-Directional Robot, and resolved sensor inaccuracies to enhance high-precision mapping capabilities.

Worked with C++, Pandas, TensorFlow, ROS, Webots, Docker, and Catkin

Human-Robot Interaction Laboratory
RESEARCH ASSOCIATE

UNB, Fredericton, Canada

May - September 2024

Technical Lead, co-author, designer, and conductor of the studies of underlying unconscious biases through interactions via avatars and teleoperated robots, in a professional setting.

Introduction to Game Development
TEACHING ASSISTANT

UNB, Fredericton, Canada

January 2024 - April 2024

Instructor: Daniel J. Rea; Responsible for marking and reviewing the lab assignments

Used Godot Engine.

Introduction to Robotics
INSTRUCTOR

SBU, Tehran, Iran

June 2023 - August 2023

Instructed for summer workshops, in order to recruit new passionate individuals for the lab.

Taught Fundamentals of Robotics, Machine Learning, A.I. Algorithms, and Simulation concepts

Concealand Game Studio
GAME DEVELOPER INTERN

SBU, Tehran, Iran

February 2023 - April 2023

Applied Reinforcement Learning, Imitation Learning, and Curriculum Learning for Procedural Content Generation (PCG, procedural animation for a humanoid character) to reduce the animation state complexity for artists.

Worked with Unity3D IK frameworks, animation rigging package, and ML model training.

Introduction to Algorithms Design
TEACHING ASSISTANT

SBU, Tehran, Iran

September 2022 - December 2022

Instructor: Ramak Ghavamizadeh; Responsible for teaching labs and designing lab assignment problemsets.

Used C++ and bash scripts to automate the test units for marking.

Introduction to Robotics
INSTRUCTOR

SBU, Tehran, Iran

June 2022 - September 2022

Instructed for summer workshops, in order to recruit new passionate individuals for the lab.

Taught Fundamentals of Robotics, Machine Learning, A.I. Algorithms, and Simulation concepts

NAO Research and Development Group

SBU, Tehran, Iran

ROBOTICS ENGINEER INTERN

July 2021 - September 2021

Responsible for Robot motion and A.I.

The project was implementing an autonomous control system for SBU omni-directional robot. Applied Localization and Mapping algorithms using ROS2 slam libraries with LIDAR sensors.

Applied using Python3.

Fixing the 3D Model in Webots which was causing a dynamic motion failure and getting familiar with robot 3D models, URDF and Proto, and the SBU omni-robot structure in Webots.

Setting Up the ROS2 platform for the robot and getting familiar with the ROS2 networking protocols and architectures.

Digital Logic Circuits

SBU, Tehran, Iran

TEACHING ASSISTANT

February 2019 - June 2019

Instructor: Hamidreza Mahdiani; Responsible for marking concept assignments.

Honors and Awards

RoboCup 2024 International Competitions, Soccer 2D Simulation League

RANKED 5TH - AS A MEMBER OF R2D2 TEAM

Summer - 2024

Scholarship from School of Graduate Studies, University of New Brunswick

BOARD OF GOVERNORS MERIT AWARDS FOR GRADUATE STUDIES

Fall - 2023

Granted Facilities from the National Elites Foundation, Iran

AS A WINNER OF AN ELITE COMPETITIVE EVENT (ROBOCUP IRANOPEN2023)

Summer - 2024

RoboCup IranOpen2023 International Competitions, Soccer 2D Simulation League

RANKED 3RD - AS A MEMBER OF R3CESBU TEAM

Spring - 2023

The Best Bachelor Thesis Project

NOMINEE

Summer - 2022

ROBOIUT2021, Webots' Line Follower league, Isfahan university of technology

RANKED 1ST

Fall - 2021

Konkour, National University Entrance Exam

TUITION WAIVED ADMISSION TO SHAHID BEHESHTI UNIVERSITY - RANKED TOP 4%

Fall - 2017

Skills

Languages : Python, C/C++, Javascript, **Frameworks** : Keras/Tensorflow, Node.JS, React, OpenCV, PyTorch, **Databases** : SQL, PostgreSQL, Pandas, Redis **Simulators** : Webots Simulator, Unity Game Engine, Robocup Soccer Simulator, Gazebo Robot Simulator, OpenAI Gym, **Knowledge** : Computer Vision, Image Processing, Signal Processing, ML, ANNs, Reinforcement Learning, SLAM (Simultaneous Localization and Mapping), Planning, Optimal Control, Evolutionary Algorithms **Operating Systems** : Windows, Ubuntu, Raspbian **MISC.** : Robot Operating System(ROS), GIT, Docker, CUDA

Research Interests

- Robotics and Autonomous Systems
- Reinforcement Learning
- Computer Vision
- Deep learning

Languages

- English : Fluent (IELTS 7.5)
- Persian : Native
- Japanese : Intermediate

Publications

Generating Hand-Written Symbols With Trajectory Planning Using A Robotic Arm

[\[more info\]](#)

2023 13TH INTERNATIONAL CONFERENCE ON COMPUTER AND KNOWLEDGE ENGINEERING (ICCKE)

27 Nov 2023

R3CESBU Soccer Simulation 2D Team Description Paper 2023 [\[more info\]](#)

TEAM DESCRIPTION PAPER FOR ROBOCUP 2023

27 Nov 2023

Extracurricular Projects

- [\[N.A.\]](#) • Avatar Robots to Mitigate Social Biases
- [\[github\]](#) • Inducing Empathy, A Method of Integrating Social Interfaces to Teleoperation
- [\[N.A.\]](#) • Overcoming Phobias Through Virtual Reality Exposure (Hobby Project)
- [\[github\]](#) • Learning Hand-Written Digit Patterns Using Robotic Arms

Curricular Projects

- [\[github\]](#) • Implementation and Analysis of Binary Index Trees for Historical Blockchain Databases
- [\[N.A.\]](#) • Comparing Relative Aim Control Schemes with Aim Assistance Techniques and GyroSensor
- [\[github\]](#) • Generating Synthetic Summarized Titles From Indian News Reports
- [\[github\]](#) • Likelihood Calculation for Student Success Based on Preprepared Dataset
- [\[N.A.\]](#) • Heater/Cooler with Energy Consumption Modeling and Optimization Control System
- [\[github\]](#) • Classification of Different Car Brand Models
- [\[github\]](#) • Simple Bitcoin Estimator Using Regression
- [\[github\]](#) • Survivability Likelihood of Titanic Passengers Data Analysis
- [\[github\]](#) • E-Puck Robot Wall Following and Obstacle Avoidance
- [\[N.A.\]](#) • Analysis and Optimization of the Shazam Algorithm
- [\[github\]](#) • A Clone of Skype's Background Blurring on Webcams

References

Available upon request