

Arya Parvizi

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Education

Master of Computer Science
UNIVERSITY OF NEW BRUNSWICK

Fredericton, NB, Canada

Bachelor of Computer Engineering
SHAHID BEHESHTI UNIVERSITY

Tehran, Iran

Experience

RESEARCH ASSISTANT

UNB, Fredericton, Canada

HUMAN-ROBOT INTERACTION LABORATORY — UNIVERSITY OF NEW BRUNSWICK

September 2023 - Present (2 years)

- Built teleoperation interfaces with ROS + Python (Tkinter); implemented an MVC architecture to improve reliability and developer velocity.
- Investigated connectivity and networking issues (routing, DNS, ROS master) and implemented automated recovery routines to stabilize robot communication.
- Performed hardware diagnostics on the Jackal's MCU/User Power Board—re-terminating connectors, verifying VBAT/power continuity, and preventing intermittent disconnections.
- Maintained and refactored a legacy codebase, improving readability, modularity, and documentation quality.
- Contributed to ongoing research on UI/UX design, system robustness, and human-robot interaction for teleoperation studies. (Empathy with Teleoperated Robots, and Mitigating Racial and Gender Bias Using Avatar Robots)

RESEARCH ASSISTANT

SBU, Tehran, Iran

ROBOTICS LABORATORY — SHAHID BEHESHTI UNIVERSITY

July 2021 - October 2023 (2 years 3 months)

- Explored and evaluated D3QN, PPO, and genetic algorithms for:
 - (a) improving value-function estimates of RCSS2D intelligent agents, and
 - (b) robotic-arm path planning (see Publications).
- Integrating C++ RCSS system with PyTorch and Python modules, using Redis-based local networking and sensor data exchange.

TEAM LEAD

SBU, Tehran, Iran

ROBOTICS LABORATORY — SHAHID BEHESHTI UNIVERSITY

September 2021 - August 2023 (2 years)

- Coordinated lab ongoing projects, onboarding, and weekly meetings across 9 active members.
- Secured a sponsorship grant from Divar to support competition and lab activities.
- Managed Git and version control, set branching strategies, code reviews, and releases.
- Designed and operationalized technical frameworks, establishing workflows, roles, processes, and milestones for four different projects (RoboCup 2dsim, Quadcopter drone, SBU Robot, and NAO).
- Packaged modules for the intelligent systems' fit, and majorly responsible for integration to the code base.
- Ran statistical analyses to assess quality of new developments; built a semi-manual CI/CD-style validation pipeline with in-house tools, and parsed/processed sparse datasets across projects to produce actionable QA reports.

ROBOTICS ENGINEER INTERN

SBU, Tehran, Iran

ROBOTICS LABORATORY — SHAHID BEHESHTI UNIVERSITY

May 2021 - September 2021 (5 months)

- Implemented and evaluated bug algorithms and obstacle-avoidance (Webots, Python); later explored particle filters and SLAM for higher autonomy (Webots, ROS, Python).
- Improved sonar-based obstacle detection (corner-miss issue) via semi-circular sweep motion; compared against sensor-swap and decoupled-panel alternatives for accuracy and energy.
- Set up ROS 2 platform and packages; worked with networking, nodes, and launch configs.
- Fixed Webots 3D model issues (URDF/PROTO) on the SBU omni-directional robot to resolve dynamic-motion failures.

GAME DEVELOPER INTERN

Tehran, Iran

CONCEALAND GAME STUDIO

January - August 2023

- Applied Reinforcement Learning, Imitation Learning, and Curriculum Learning for Procedural Animation of a humanoid character to reduce the animation state complexity and workload for artists.
- Worked with Unity IK frameworks, animation rigging package, and ML model training

Honors and Awards

RoboCup 2024 International Competitions, Soccer Simulation 2D 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 Simulation 2D League

RANKED 3RD — AS A MEMBER OF R3CESBU TEAM

Spring - 2023

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

RANKED 1ST

Fall - 2021

Skills

- **Languages** : Python, R, Matlab, C/C++, Javascript, Java
- **Frameworks** : PyTorch, TensorFlow, OpenCV, Node.JS, React, Bootstrap
- **Databases** : MySQL, PostgreSQL, Apache Hive, Apache Hadoop, Pandas, Redis
- **Misc.** : GIT, Docker, CUDA, Webots, Gazebo

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

Independent Projects

- A Serious VR Game to Overcome Arachnophobia, Using Unity C# and MetaQuest3
- [\[github\]](#) • A Clone of Feed and Grow Game, A Platform to train NEAT Algorithm Using Unity C#
- An Implementation of a 2D Soccer Platform, and NEAT Algorithm to Train AI Using Unity C#
- A Solution to Minesweeper Using Naïve Bayes and Inference Approach (Mineswiper), Application on Excel
- Intelligent Agent Tic-Tac-Toe Player, Using Java

Curricular Projects

- [\[github\]](#) • Likelihood Calculation with multiple ML Approaches for Student Success Based on Real-World Dataset from Kaggle
- [\[github\]](#) • Synthetic Summarized Titles From Indian News Reports, Using Python NLTK Based on Real-World Dataset from Kaggle
- [\[github\]](#) • Classification of Different Car Brand Models, Using CNNs and Webscraping with Keras
- [\[github\]](#) • Simple Bitcoin Estimator Using Regression, Using Python Pandas and Numpy
- [\[github\]](#) • Survivability Likelihood of Titanic Passengers Data Analysis, Using Python Based on Real-World Dataset
- Analysis and Optimization of the Shazam Algorithm in Music Recognition, Using Matlab
- [\[github\]](#) • Implementation and Analysis of Binary Index Trees for Historical Blockchain Databases, Using Java
- [\[github\]](#) • Comparing Relative Aim Control Schemes with Aim Assistance Techniques and GyroSensor, Using Unity C#
- [\[github\]](#) • E-Puck Robot Wall Following and Obstacle Avoidance, Using Webots Python
- [\[github\]](#) • A Complete Implementation of Decaf Compiler, Using Java
- [\[github\]](#) • A Clone of Skype's Background Blurring on Webcams
- [\[github\]](#) • Eight Puzzle AI Solver Using BFS, DFS, A*, and IDA*, Using Java
- Automated Scheduling and Course Selection for Students, Using Java, and CSP Algorithm
- [\[github\]](#) • Wall Following and Path Finding Using BUG1 and BUG2 Algorithms for E-Puck Robot in Webots Simulator, Using Webots C++

References

Available upon request