# Arya **Parvizi**

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## Education

**Master of Computer Science** — *Fredericton, NB, Canada*
**UNIVERSITY OF NEW BRUNSWICK**

**Bachelor of Computer Engineering** — *Tehran, Iran*
**SHAHID BEHESHTI UNIVERSITY**

## 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.
- 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)

**GAME DEVELOPER INTERN** — *Tehran, Iran*
Concealand Game Studio — *January - August 2023*

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

**TEAM LEAD** — *SBU, Tehran, Iran*
Robotics Laboratory —Shahid Beheshti University — *September 2021 - August 2023 (2 years)*

- Led a 9-member interdisciplinary team bridging hardware and AI through TCP-based networking, developing intelligent agents for both simulated and real robotic systems (RoboCup 2D, quadcopter, SBU omni-robot, and Humanoid NAO).
- Secured a sponsorship grant from Divar to support competition and lab activities.
- Managed Git workflows, code reviews, and technical design across multiple game-like simulation environments.
- Integrated and packaged modules for intelligent-system compatibility; ensured cohesive builds and cross-team integration.
- Built and maintained a semi-manual CI/CD-style validation pipeline, performing statistical analyses on sparse datasets to generate actionable QA reports.

## Teaching

**TEACHING ASSISTANT** — *UNB, Fredericton, Canada*
Algorithms Design and Analysis — *Winter 2025*

- Instructor: Huajie Zhang; Responsible for marking and reviewing assignments

**TEACHING ASSISTANT** — *UNB, Fredericton, Canada*
Introduction to Game Development — *Winter 2024*

- Instructor: Daniel Rea; Responsible for marking and reviewing assignments, as well as tutorial outline
- Worked with Godot Engine.

**INSTRUCTOR** — *SBU, Tehran, Iran*
Introduction to Robotics — *Summers 2022 & 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, using C++ and Python

## 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*

## Skills

- **Languages** : Python, C#, C/C++, Javascript, Java
- **Frameworks** : Node.JS, React, Bootstrap, PyTorch, TensorFlow
- **Databases** : MySQL, PostgreSQL, Apache Hive, Apache Hadoop
- **Misc.** : Unity, Animation, Rigging, Godot, GPU Programming, GIT, Docker

## 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

[page] • **Dummy Paradox — GMTK 2025 GameJam Prototype (Themed Loop)**
• **A Serious VR Game to Overcome Arachnophobia, Using Unity and MetaQuest3**
[github] • **A Clone of Feed and Grow Game, A Platform to train NEAT Algorithm Using Unity C#**
• **A Clone of Hollow Knight Game, Using Unity**
• **A Clone of Stick Hero Game, Using C++ SDL Library**
• **Spaceship Adventure Game, Using Unity C#**

## Curricular Projects

[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] • **A Complete Implementation of Decaf Compiler, Using Java**
[github] • **Eight Puzzle Game and AI Solver Using BFS, DFS, A*, and IDA*, Using Java**
[github] • **Multi-player Chess Game Clone Platform Using JavaFX**
• **A Clone of Doodle Jump Using C++ SDL Library**

## References

**Available upon request**