

Alireza Barekatin

Isfahan, Iran

Email: alireza.barekatin1996@gmail.com | Telephone: +98 913 712 5184

(Please check my projects at [abarekatin.github.io](https://github.com/abarekatin))

EDUCATION

09/2018 – 06/2020 (Expected)

Master of Science, Isfahan University of Technology, Iran

Mechanical Engineering, *Cloud-Based Robotics*

- GPA (So far): 18.48/20 (4/4)

09/2014 – 09/2018

Bachelor of Science, Isfahan University of Technology, Iran

Mechanical Engineering, *Thesis Title: Design and Development of a Passive Wrist and Forearm Rehabilitative Exoskeleton*

- GPA: 18.96/20 (4/4)
- Ranked 2nd among 135 B.Sc. students in the Department of Mechanical Engineering

RESEARCH EXPERIENCE

12/2017 – 09/2018

Undergraduate Research Assistant, Dept. of Mechanical Engineering, Isfahan University of Technology
BSc Thesis, *Design and Development of a Passive Wrist and Forearm Rehabilitative Exoskeleton*

- Led a team of four people, Responsible for Device Design using CAD software packages
- Gained practical experience in Design Principles and Manufacturing operations (Milling & Lathe)

02/2018 – 04/2018

Research Project, Advanced Robotics & Mechatronics Lab., Isfahan University of Technology
Development of an interactive interface for Rehabilitation Robotics

- Responsible for development of an interactive interface between KUKA Robot and patient
- Developed by Unity3D, C#, C++, Gained familiarity with iiwa KUKA robot

WORK EXPERIENCE

07/2016 – 04/2017

Independent(Indie) Game Development

Development of a 2D puzzle game targeted for android platform

- Unity3D/C# Developer, Game Designer, Worked in a team of three people
- Nominated for 'Game Design' and 'Innovation' among 133 games at 3rd Festival of Independent Game Developers (IGDF), Tehran, Iran

07/2016 – 04/2017

Graphical User Interface Programming, Rayan Tahlil Co., Isfahan Science and Technology Town, Iran

Development of a GUI for visualizing thermal parameters of hot rolling process at Mobarakeh Steel Company

- GUI Designer, C# Programmer

06/2015 – 03/2016

Game Programming, Talee Ltd., London, UK

Development a Talking Robot Simulation Game

- C# Programmer

07/2015 – 11/2015

Virtual Lab Simulation, 1st National Fluid Mechanics Competition, Isfahan University of Technology, Iran.

Development of an application visualizing a real laboratory experiment

- C# Programmer, Led a team of four people
- Awarded 1st Place among 15 teams

SKILLS

Technical Skills & Knowledge

- Proficiency in Software Programming, Game Development and 3D Simulation, GUI Design and Development
- Knowledge of Data Structures and Algorithms, Computer Networking, Kinematics and Dynamics, Linear Algebra, Electrical and Mechanical principles of Sensors and Actuators
- Experience with Object-Oriented Programming, CFD, CNC Milling and Manual Lathe Machine
- Familiar with Motion Planning & Control, Electronic Circuit Design, Finite Element Analysis, Neural Network
- Familiar with Electrical and Mechanical design principles and CAD/CAM/CAE tools

Software Skills

- Proficiency in C#, Unity3D Game Engine, Abaqus
- Experience with C++, Visual Studio, CodeVisionAVR, Photoshop, AutoCAD, Inventor, tecPlot,
- Familiar with Python, Ubuntu Linux, ROS, Gazebo, Git, Matlab, Java, Fortran, V-Rep, Altium Designer

Language proficiency

- Persian: Native Language
- English: Fluent (IELTS Band Score: 7.5)

SELECTED COURSES & PROJECTS

University Courses

- Fundamentals of Mechatronic Systems
- Automatic Control
- Mechanics in Robotic Systems
- Applied Electrics and Electronics
- Computer Programming (C++)
- Manufacturing Automation
- Advanced Engineering Mathematics
- Mechanical Vibrations
- Numerical Methods
- Differential Equations

Extra Courses

- Computer Vision (ongoing)
- Robotics Software Engineer Nanodegree (Online- ongoing)
- Fundamentals of Computer Science (Online)
- Computation Structures (Online)
- Algorithms and Data Structures (Online)
- Python Programming (Online)
- Introduction to ROS (Online)
- Network+
- CCNA Routing & Switching

Projects

- Kinematics Analysis, Trajectory Planning, and Control of a UR5 Robot using Simulink and V-Rep ([Link](#))
- Electronic circuit design, assembly, and programming of a temperature controller device (ongoing)
- 3D Printing Analysis and Simulation of a Structured Material in Abaqus
- CFD Analysis and Visualization of a 2D geometry using Finite-Volume method ([Link 1](#), [Link 2](#))
- Design of HVAC Systems for a residential complex
- Injection Molding Analysis and Simulation of a dog bone test sample using MoldFlow & Abaqus

HONORS & AWARDS

- Distinguished Student Award, 2nd rank among 135 undergraduate students of department of mechanical engineering at Isfahan university of technology, four consecutive years (2014 to 2018)
- National Elite Recognition, Iran National Organization of Elites (2018 to 2019)
- Member of exceptional talents of Isfahan University of Technology (2014 to 2019)
- Awarded merit-based admission to study at Isfahan University of Technology for graduate program without entrance exam (2018)
- Ranked 197th (Top 0.2%) among 191466 students in National University Entrance Exam (2014)

PERSONAL INTERESTS & ACTIVITIES

- Piano & Taar (a traditional instrument)
- Volleyball