

# Erfan Zekri Esfahani

CV

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## Education

- 2019–Now **M.S. in Computer Science-Artificial Intelligence and Robotics,** *Isfahan University of Technology, Isfahan, Iran.*  
**Advisers:** Dr. Maziar Palhang.  
**Thesis:** "Detection and Tracking a Moving Ball using a Humanoid Robot Followed By an Immediate Kick"  
**GPA: 18.06/20.**  
**Selected Courses:** Pattern Recognition (20/20), Autonomous Mobile Robots (19.61/20), Computer Vision (17.8/20), Swarm Intelligence (17.83/20), Deep Learning (17.4/20)
- 2015–2019 **B.S. in Computer Engineering-Software Engineering,** *Shahrekord University, Shahrekord, Iran.*  
**Adviser:** Dr. Reza Rouhani.  
**Thesis:** "Multi Kinect Sensor Fusion for Noise Reduction"  
**GPA: 17.53/20.**  
**Selected Courses:** Principles of Robotics (20/20), Computer Vision Fundamentals (20/20) [Class Avg.: 12.47/20], Computational Intelligence Fundamentals (19.5/20), Computer Graphics (20/20), Micro Processor (20/20) [Class Avg.: 12.91/20], Operating System (20/20) [Class Avg.: 12.94/20], Computer Networks (20/20), Compiler Design Fundamentals (20/20), Formal Languages and Automata (20/20) [Class Avg.: 12/94/20], Programming Language Design (19.75/20), Signals and Systems (19/20) [Class Avg.: 11.89/20], Internet Engineering (19/20) [Class Avg.: 11.67/20], Natural Language Processing (18.80/20), Database (18/20), Data Structure (18/20)
- 2011–2015 **Diploma in Mathematics and Physics,** *Shohadaye Adab High School, Isfahan, Iran.*  
**GPA: 18.50/20.**

## Research Interests

- Machine Learning
- Deep Learning
- Computer Vision
- Robotics and Humanoid Robots

## Research Experience

- Nov. 2019–Now **Graduate Research Assistant at Artificial Intelligence Laboratory (AI Lab.)** *Department of Electrical and Computer Engineering, Isfahan University of Technology, Isfahan, Iran.*

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## Teaching Experience

- Spring 2021 **Teaching Assistant**, Autonomous Mobile Robots, *Dr. Palhang, Isfahan University of Technology, Isfahan, Iran.*
- Fall 2020 **Teaching Assistant**, Machine Learning, *Dr. Palhang, Isfahan University of Technology, Isfahan, Iran.*
- Fall 2020 **Teaching Assistant**, Introduction to Computing Systems and Programming, *Mr.Zahabi, Isfahan University of Technology, Isfahan, Iran.*
- Spring 2019 **Teaching Assistant**, Introduction to Computing Systems and Programming, *Mrs.Moradi, Shahrekord University, Shahrekord, Iran.*
- Spring 2019 **Teaching Assistant**, Formal Languages and Automata, *Mr.Mostafavi, Shahrekord University, Shahrekord, Iran.*
- Spring 2018 **Teaching Assistant**, Formal Languages and Automata, *Mr.Mostafavi, Shahrekord University, Shahrekord, Iran.*
- Fall 2017 **Teaching Assistant**, Introduction to Computing Systems and Programming, *Dr.Rouhani, Shahrekord University, Shahrekord, Iran.*

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## Work Experience

- Jun.-Sep. 2019 **Customer Technical Support Internship**, ICAN Engineering group, Isfahan, Iran
- Support companies' networks and their SQL databases
- Jul.-Oct. 2018 **Graduation Internship**, Isfahan's Mobarakeh Steel Company, Isfahan, Iran
- Designing and developing windows application projects using C#, WPF, ADO.NET and SQL

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## Volunteer Experience

- Feb. 2021 **Content Contributor**, Facebook (Meta) Company, California, United States
- contribute in [react-native-website](#) and [yoga](#) repository of Facebook (Meta) Company
- 2018-2019 **Co-Founder and Main Member of Scientific Association of Digital Games and Animation**, Shahrekord University, Shahrekord, Iran

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## Certificates

- Sep. 2022 **Python for Finance:** [Sololearn](#)
- Sep. 2022 **Python for Beginners:** [Sololearn](#)
- Aug. 2022 **Machine Learning:** [Sololearn](#)
- Aug. 2022 **Python Core:** [Sololearn](#)
- Feb. 2019 **SQL:** [Sololearn](#)
- Jun. 2018 **JQuery:** [Sololearn](#)

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## Computer Skills

- Programming Languages** *Expert:* Python, C++  
*Basic:* C#, C, MATLAB, Prolog, Assembly, Fortran, Java

<b>AI Frameworks and Libraries</b>	Darknet, OpenCV, Tensorflow, Keras, Scikit-learn, Gym
<b>Robotics</b>	ROS, Gazebo, Humanoid Robots, Raspberry Pi, Arduino
<b>Web Development</b>	ASP.NET MVC, HTML, CSS, JavaScript, Bootstrap, JQuery
<b>Mobile Phone Development</b>	React Native
<b>Game Development</b>	Unity
<b>DBMS</b>	Microsoft SQL Server, MongoDB
<b>TypeSetting</b>	Microsoft Word, L <sup>A</sup> T <sub>E</sub> X
<b>OS</b>	Windows, Linux (Ubuntu), Raspbian OS
<b>Others</b>	Git

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## Projects

- 2020-Now **Prepare Humanoid Robots for Robocup Competition**, Isfahan University of Technology, Isfahan, Iran
- Develop Receiver for Robocup Game Controller, Create and Spawn Humanoid Robot URDF Model in Gazebo Simulation, Train a Network to Detect the Ball, Track the Ball Over Time, Develop Shoot Action for Robot (Both Simulation and Real Robot), and Implement All Algorithms on ROS1 Noetic (Simulation) and ROS2 Foxy (Real)
- Jun. 2022 **COUP Board Game for Android**, Self Motivation, Isfahan, Iran
- COUP Board Game using Unity, [\*Published in Cafebazaar \(Persian App Store\)\*](#)
- Jul. 2020 **Particle Filter for Autonomous Mobile Robots**, Isfahan University of Technology, Isfahan, Iran
- Particle Filter Algorithm using Python and ROS (Noetic), [\*Source Code in Github\*](#)
- Aug. 2019 **Sudoku Solver for Android**, Self Motivation, Isfahan, Iran
- Sudoku Solver Application using React-Native, [\*Published in Cafebazaar \(Persian App Store\)\*](#)
- Jun. 2019 **Depth Detection with Stereo Camera**, Shahrekord University, Shahrekord, Iran
- Compute Depth of Several Spherical Objects with Two Images using MATLAB, Circle Hough Transform Algorithm, and Triangulation (Computer Vision Course Project)
- Jun. 2019 **Simulation of an Autonomous Car to Find a Specific Black Colored Square**, Shahrekord University, Shahrekord, Iran
- Compute Car Wheel Speeds and Positions (as Servo Motors) to Search Whole Area to Find a Specific Black Colored Square (Robotics Course Project)
- Jun. 2019 **Simulation of a Mechanical Arm to Move Objects**, Shahrekord University, Shahrekord, Iran
- Compute Joint Angles of a Mechanical Arm to Go to a Specific Point using Forward Kinematic (Robotics Course Project)

- Jan. 2019 **Noise Canceling for Human Voices**, Shahrekord University, Shahrekord, Iran  
 - Cancel Environment Noises using Low/High Pass Filter with MATLAB (Signal Processing Course Project)
- Jan. 2019 **Iris Flower Classification**, Shahrekord University, Shahrekord, Iran  
 - Classify Iris Flowers using Python and Scikit-learn Library (Computational Intelligence Course Project)
- Jan. 2019 **Author's Gender Classification**, Shahrekord University, Shahrekord, Iran  
 - Classify Author's Gender using Python and Scikit-learn Library (Natural Language Processing Course Project)
- Jun. 2019 **Weightlifting Game for Windows**, Shahrekord University, Shahrekord, Iran  
 - Weightlifting Game using C++ and DirectX Library (Graphics Course Project), [Source Code in Github](#)
- Jun. 2018 **Redevelopment of Cinematicket Website**, Shahrekord University, Shahrekord, Iran  
 - Redevelopment of Sell/Buy Cinema and Theater Tickets Website ([Cinematicket](#)) using HTML, CSS, Javascript, Json, Ajax, and Bootstrap (Internet Engineering Course Final-term Project)
- Mar. 2018 **Minesweeper Game for the Web**, Shahrekord University, Shahrekord, Iran  
 - Minesweeper Game using HTML, CSS, Javascript, and Bootstrap (Internet Engineering Course Mid-term Project), [Play Game Online](#)
- Dec. 2017 **Tic-Tac-Toe Game for Android**, Shahrekord University, Shahrekord, Iran  
 - Smart Tic-Tac-Toe Game using Unity, C#, and Minimax Algorithm (AI Course Project)
- Aug. 2017 **Simple Action and Intellectual Games for Windows**, Self Motivation, Isfahan, Iran  
 - Several Simple Games using Unity and C#
- Aug. 2016 **Flappy Bird Game for Windows**, Self Motivation, Isfahan, Iran  
 - Develop Flappy Bird Game using C++, SDL extention, and Physics Motion Formulas
- Apr. 2016 **Car Number-Plate Recognition**, Shahrekord University, Shahrekord, Iran  
 - Recogniton of Simple Handmade Number-Plates using C++, SDL extention, and pixel-wise processing
- Mar. 2016 **Windows Paint**, Shahrekord University, Shahrekord, Iran  
 - Windows Paint Application using C++ and SDL extention
- Jan. 2016 **Reserve Food System (in Terminal)**, Shahrekord University, Shahrekord, Iran  
 - Reserve and Consume Food Coupons in University's Dinning Salon as a simulation, [Source Code in Github](#)

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## Honors & Awards

- 2020 **Ranked 1<sup>st</sup>** in [Digikala](#) (Biggest Online Store in Iran) Artificial Intelligence (AI) Challenge, Isfahan University of Technology, Isfahan, Iran

- 2019 **Talented Student Award:** Qualified for graduate studies in Isfahan University of Technology, Isfahan University, and Shiraz University without entrance exam, Iran
- 2019 **Ranked 2<sup>nd</sup>** among Computer Engineering students in all 8 semesters, Shahrekord University, Shahrekord, Iran
- 2016 **Ranked 2<sup>nd</sup>** in ACM intra-university Contest, Shahrekord University, Shahrekord, Iran
- 2007 **Ranked in top 2% in the B. S. Nationwide Universities Entrance Exam,** Physics and Mathematics Diploma, Iran

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## Languages

- English** Professional Working Proficiency
- Persian** Native Language

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## Hobbies

- Reading Books
- Playing Soccer
- Playing Video Games
- Swimming
- Playing Badminton