

Pourya Khaksari

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Fields of Interest	Image Processing Algorithms & Data Analysis	3D Computer Vision Machine Learning	Robotics and Automation IoT
Education	<div><div>K. N. Toosi University of Technology2020-2023</div><div>M.Sc. in Computer Engineering – Hardware Engineering</div><div>University of Tehran2014-2019</div><div>B.Sc. in Computer Engineering – Hardware Engineering</div><div>Allame Helli 3 High School2010-2014</div><div>Diploma of Mathematics and Physics</div></div>		
Research Experiences	<div><div>Research Assistant – K. N. Toosi University of Technology- supervisor: Masoud Dehyadegari2023 -2024</div><div>Working on a Survey paper on 3D computer vision.</div><div>- The paper, submitted to the prestigious journal <i>Transactions on Visualization and Computer Graphics</i>, covers various state-of-the-art techniques, methodologies, and applications in the field of 3D computer vision. We recently received reviewer comments and are in the process of revising the paper for publication.</div><div>Master Thesis – K. N. Toosi University of Technology - supervisor: Masoud Dehyadegari2022-2023</div><div>Implementing deep learning-based method for 3D Object Detection using Transformer neural network and using noise removal methods to preprocess the point cloud for speed up.</div><div>- Transformer Neural Networks, Convolutional Neural Networks (CNN)</div><div>- MMLab engines, MMDet3D, MMCV</div><div>-Ground Segmentation for point cloud data</div><div>-Kitti Dataset</div><div>Data Analyst - Hoodad – Caspian Smart Products - supervisor: abdollah eshghi2021</div><div>our paper “an intelligent method for detecting gambling transactions using random forest” has been accepted in 7th International Conference on Industrial and Systems Engineering.</div><div>-Random Forest Algorithm using python for real-time transaction classification tasks</div><div>Bachelor Thesis - University of Tehran – supervisor: Saeed Safari2019</div><div>Deep learning-based Pedestrian-Detection for cars, Computer Vision and Pattern Recognition with python.</div><div>- Various deep learning frameworks (e.g., TensorFlow, PyTorch)</div><div>-implement and test YOLOv3</div></div>		
Teaching Experiences	<div><div>K. N. Toosi University of Technology</div><div>TA: Advance Computer Architecture2022</div><div>University Of Tehran</div><div>TA: Micro Processor Lab2019</div><div>TA: Introduction to Computing Systems & Programming2015</div></div>		
Relevant Courses	<div><div>Computer Architecture: Saeed Safari16.47/20</div><div>Computer Aided Digital System Design: mostafa ersali16.2/20</div><div>Hardware/Software Codesign: mostafa ersali19/20</div><div>Real time Embedded system: Mehdi Kargahi16.5/20</div><div>Parallel Programming: Saeed Safari17.9/20</div><div>Cloud Computing: Saeed Sedighian17.5/20</div><div>Logic Circuits Design: Zainalabedin Navabi Shirazi15.2/20</div><div>Advance Computer Architecture: Masoud Dehyadegari18/20</div></div>		
Publication	<div><div>1. Title: "3D Point Cloud Processing: A Survey" Authors: Alireza Dehghanpour, Zahra Sharifi, Pourya Khaksari, Negin Rajabi, Masoud Dehyadegari, Hoda Roodaki Journal: <i>IEEE Transactions on Visualization and Computer Graphics</i>, Year: 2024 Status: Revise (Jun 2024)</div><div>2. Title: “Introducing a random forest based intelligent method for detecting suspicious illegal gambling transactional patterns” Authors: Narjes shafiei bavani, Alireza badamchi, Ali naghavi, Pourya khaksari, Negin khamseh, Ghazaleh Shahidi Conference: 7th International Conference on Industrial and Systems Engineering, Year: 2021</div></div>		

Working Experience	<div> <p>Data Analyst - Hoodad – Caspian Smart Products (2 year & 2 months) : abdollah eshghi 2020 - 2022</p> <p>Project: -Developing Fraud Detection System for Banks to Detect suspicious clients and transactions to prevent anti money laundering using machine learning methods and designing a dashboard for monitoring the system.</p> <p>Responsibilities and Achievements: - Conducted data extraction and manipulation tasks using SQL to obtain relevant information from the Oracle database. - Developed the backend of the application using the Python Django framework, ensuring efficient data processing and management. - Implemented a responsive and interactive user interface for the BI panel using Angular TypeScript, enhancing the overall user experience. - Applied the Random Forest machine learning method to identify trends and patterns within the dataset</p> <p>Technologies Used: - Database: Oracle, SQL - Backend: Django, Python - Frontend: Angular, TypeScript - Machine Learning: R, Python</p> </div> <hr/> <div> <p>Micro Controller Developer - Samim Group - Media & Communications Technology (4 months) 2019</p> <p>Project: -Implementing bootloader for LPC1768 NXP ARM Microcontroller to be Updatable by network (UDP packets).</p> <p>Responsibilities and Achievements: - Engineered a custom bootloader in C for NXP ARM microcontrollers, enabling remote updates through network connectivity. - Implemented a secure and efficient update mechanism using UDP packets for seamless transmission of new code to devices. integrated C# components for sending update signals and transmitting code over the network.</p> <p>Technologies Used: - Microcontroller: NXP ARM, C - Network Communication: C#, UDP</p> </div> <hr/> <div> <p>Intern - University of Tehran – System on Chip lab (4 months) : mostafa ersali 2018</p> <p>Project: -Accelerating robot processes with navigation and obstacle crash avoidance by ARMFPGA+Arduino board.</p> <p>Responsibilities and Achievements: - Orchestrated the integration of Arduino and FPGA to create a cohesive control system for the robot. - Offloaded computationally heavy processes to the FPGA, optimizing the robot's overall performance.</p> <p>Technologies Used: - Microcontroller: Arduino, C - FPGA: VHDL</p> </div>
Skills	<p>Programing Languages: C, C++, Python, Java, TypeScript, SQL, HTML, CSS, Verilog (Intermediate), VHDL</p> <p>General: Excellent problem-solving abilities, Algorithm Design, Data Structures, Graph Theory, OOP, LPC NXP ARM Microcontrollers, code vision AVR, Arduino, Raspberry pie, DXP Altium designer, Socket Programing, bootstrap, angular, android, OpenCV, Tensorflow, pyTorch, Django</p>
Academic Projects	<p>Microprocessor: Use Bluetooth to control light switch (USART-I2C) Computer Architecture: Implement MIPS on FPGA (Xilinx spartan3 – Verilog) Computer Aided Design: Neural Network on FPGA (ISE – VHDL) Parallel Programming: Accelerating Image processing with SIMD methods (C++ - OpenCV - Cuda) Hardware/Software Codesign: Accelerating Neural Network with adding custom instruction (Nios II) Programming Languages and Compilers: Implementing compiler for “toorla” programming language</p>
Awards	<p>3rd Place at Junior's soccer (Open weight) Robo Cup Iran Open competitions 2012 (Qualified for International Robo Cup 2012 Mexico) 2nd Place at Kharazmi soccer Robo Cup competitions 2011 3rd Place at Junior's Robo Cup Farzcup competitions 2012 3rd Place at Junior's Robo Cup Farzcup competitions 2013</p>
Languages	<p>Persian (native), English: TOEFL iBT (Total: 98 – Reading: 26, Listening: 29, Speaking: 22, Writing: 21)</p>
Hobbies	<p>Football, Volleyball, Movies, Hiking</p>