Arman Akbari

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Education

University of Tehran (Received Full Scholarship) **Sep. 2020 – Present**
Bachelor of Science in Computer Science - GPA: 3.94/4 (19.02/20) FIRST RANK *Tehran, Iran*

National Organization for Development of Exceptional Talents(SAMPAD) **Sep. 2007 – Sep. 2020**
Diploma in Mathematics - GPA: 19.5/20 *Tehran, Iran*

Publications

A 2D Geometry Based Grasping Pose Generation Algorithm for a Two-finger Robot Hand
Accepted in ICEEconf and will be published soon

Research Experience

Research Assistant, Singapore University of Technology and Design (SUTD) **Jan. 2023 , May, 2023**
Supervisor: Prof. Ngai-Man (Man) Cheung

- Execute the intricate task of implementing Diffusion Models, with a special focus on the application of Denoising Diffusion Probabilistic Models (DDPMs). Undertake the challenging endeavor of training these DDPMs utilizing a constrained datase

Research Assistant, TaarLab: Human and Robot Interaction Laboratory **Jun, 2022 - Apr, 2023**
Supervisor: Dr. Tale Masouleh

- A 2D Geometry Based Grasping Pose Generation Algorithm
- A method for removing ungraspable pair points before testing them
- Implementing deep reinforcement learning algorithms that use our grasping pose generation the algorithm as input data

Related Courses

- **Artificial Intelligence** [4/4]
- **Deep Learning (Topics in CS 1)** [4/4]
- **Data Mining** [4/4]
- **Linear Algebra** [4/4]
- **Design and Analysis of Algorithms** [4/4]
- **Data Structures and Algorithms** [4/4]
- **Advanced Programming** [4/4]
- **Probability 1** [4/4]
- **Stanford CS229(Machine Learning)** [Audit]
- **Stanford CS231n(Computer Vision)** [Audit]

Projects Experience

DDPMs **Mar, 2023**
Internship at SUTD in Singapore

- Diffusion models are a type of generative model used in machine learning and statistics. This is a basic implementation of Denoising Diffusion Probabilistic Models

Grapevine Leaves Image Classification **Jul, 2022**
Data Mining project [done Individually and received full mark]

- Comparing different pretrained CNN models
- Designed an auto encoder for denoising

Transfer Learning (Artificial Neural Networks, Computer vision) **Nov, 2022**
Voluntarity Project

- comparing different transfer learning models to custom CNN on CIFAR-10 dataset

Bio-Computing **Apr, 2023**

Assignments of Bio-Computing course

- Implementing many bio-computing algorithms such as genetic algorithm, PSO, and Ant Colony with Python and solving combinatorial problems such as N-Queen, TSP, and etc. with them.

Four Connect **Nov, 2022**

Assignments of Artificial Intelligence course

- I used AI algorithms such Minmax and Monte Carlo Search Tree to build an agent in order to play Four Connect game

Mini Database System using B-Tree (C++) **Feb, 2022**

Data structures and algorithms final project

- Implementation of a simplistic relational database purely in C++

Control Panel (Django) **Feb, 2021**

Final project of Basic programming course

- high level panel for uploading and grading assignments with different privileges

Teaching Experience

Data Mining

Teaching Assistant for Dr. Sajedi, University of Tehran *Spring 2023*

Fundamentals of Computer Science and Programming

Teaching Assistant for Dr. Nowzari, University of Tehran *Fall 2022*

Fundamentals of Computer Science and Programming

Teaching Assistant for Dr. Mousavian, University of Tehran *Spring 2022*

Differential Equations

Teaching Assistant for Dr. Rokni, University of Tehran *Spring 2022*

Honors And Awards

Awarded Best technical team in Robocup Asia Pacific **2018**

Tasked to detect the ball in the field with OpenCV(image processing)

Robocup Iran Open International Competitions Participation. **2018**

Tasked to design algorithms and program the robot with c++

Received Full Scholarship from the University of Tehran **2020**

Accepted in this program (Konkour) with nearly 0.02/100 acceptance rate

Ranked 355 in Iran's National University Entrance Exam(over 250,000 Participants) **2020**

Ranked 355 out of 250000 students in national university entrance exam, Mathematical studies

Member of National Organization for Development of Exceptional Talents. **2007 - 2020**

The organization is aimed to provide a unique educational environment for the exceptionally talented students

Skills

Programming Languages: Python, C/C++

Frameworks/Libraries: Pytorch, Tensorflow, Keras, Scikit-learn, openCV, Pandas, Numpy, Matplotlib, Seaborn, Django

Soft Skills: Teamwork, Problem Solving, Work Ethic, Adaptability, Critical Thinking

Others: LaTeX, Violin(+6 years of experience), Music Theory, Git, Linux

Languages

Persian: Native **English**: Proficient