Arman Akbari

Email: armanakbari456@gmail.com
Github: github.com/armanakbari
Mobile: +98-919-0214-478
Skype: live:5f76bd8fc7ac6dd5

Research Interests

- Machine Learning
- Computer Vision
- Reinforcement Learning
- Deep Learning

Publications

A 2D Geometry Based Grasping Pose Generation Algorithm for a Two-finger Robot Hand

- In this paper, a geometry-based algorithm is presented which can find grasp poses based on the geometry of the unknown object and propose the ones which may lead to successful grasping. Simulation results demonstrate that the proposed algorithm for unknown object grasping can find a finite number of successful grasp poses for different seen or unseen objects without using any random point

Education

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

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

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 **2022 - Now**
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

Projects Experience

Grapevine Leaves Image Classification **Jul, 2022**
classifying and EDA with denoising and data augmentation

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

Transfer Learning (Artificial Neural Networks, Computer vision) **Nov, 2021**
comparing different transfer learning models to custom CNN on CIFAR-10 dataset

Mini Database System using B-Tree (C++) **Feb, 2022**
Implementation of a simplistic relational database purely in C++

Control Panel (Django) **Feb, 2021**
high level panel for uploading and grading assignments with different privileges

Corridor Game (C++) **Jul, 2021**
server-client based game which can handle up to 4 players

Related Courses

- **Data Mining** [19.2/20]
- **Artificial Intelligence** [20/20]
- **Deep Learning (Topics in CS 1)** [18.18/20]
- **Linear Algebra** [20/20]
- **Probability 1** [17/20]
- **Data Structures and Algorithms** [19.33/20]
- **Design and Analysis of Algorithms** [20/20]
- **Advanced Programming** [19.25/20]
- **Stanford CS229(Machine Learning)** [Audit]
- **Stanford CS231n(Computer Vision)** [Audit]

Course Certification

Machine Learning — Credential ID EJUEQN5ABDFD **Nov. 2021**

This course provides a broad introduction to machine learning, datamining, and statistical pattern recognition.

- Topics include: Supervised learning (SVM, kernels, neural networks), Unsupervised learning (clustering, dimensionality reduction, recommender systems, deep learning)

Deep Learning Specialization — Credential ID WYBXMV4D8XRF **Nov. 2021**

This Specialization consists of 5 coursers:

- Neural Networks and Deep Learning
- Structuring Machine Learning Projects
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
- Convolutional Neural Networks
- Sequence Models: build and train RNNs, work with NLP and Words Embeddings

Teaching Experience

Teaching Assistant

University of Tehran

- Data Mining — Dr. Sajedi (Spring 2023)
- Fundamentals of Computer Science and Programming — Dr. Nowzari (Fall 2022)
- Fundamentals of Computer Science and Programming — Dr. Mousavian (winter 2022)
- Differential Equations — Dr. Rokni (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: Tensorflow, Keras, Scikit-learn, openCV, Pandas, Numpy, Matplotlib, Seaborn, Django

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

Others: Violin(+4 years of experience), Music Theory, Git, Linux

Languages

Persian: Native **English**: Proficient