Aref Tabatabaei

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EDUCATION

Amirkabir University of Technology (Tehran Polytechnic)

Tehran, Iran
Sep. 2019 - Jan. 2024

Bachelor of Science in Computer Engineering

- **GPA:** 15.83/20
- **Selected Courses:** Computational Intelligence | Applied Linear Algebra | Algorithm Design | Engineering Statistics | Robotics | Database Design

PUBLICATIONS

- Aref Tabatabaei, Zahra Dehghanian, Negar Movaghatian, and Maryam Amirmazlaghani. "NO MORE BLAH-BLAH: EMBRACING REAL TEXT IN THE IMAGE SYNTHESIS WORLD." In The Second Tiny Papers Track at ICLR 2024.

Preprints

- Aref Tabatabaei, Zahra Dehghanian, and Maryam Amirmazlaghani. "A Conditional Inpainting Approach for End-to-End Artifact Removal in VTON and Pose Transfer." Preprint, 2024.

RESEARCH & WORK EXPERIENCES

Freelancer

Mar. 2024 - Current

Web Development

- Full-Stack: Developed a full-stack website using React and Django along with Sanity. Feel free to visit it Here.
- Back-End: Technical projects with Django & Golang like ToDo List, Slack Bot, Blog Post, Book Recommender.

Amirkabir University of Technology (Polytechnic Iran)

Dec. 2022 - Jan. 2024

Undergraduate Research Assistant Under the Supervision of Prof. Maryam Amirmazlaghani | Statistical Machine Learning LAB

- **Image Generation & Text-to-Image Models**: Engaged with Generative Adversarial Networks (GAN) and diffusion models to advance the field of image generation, focusing on innovative approaches to integrate text into images.
- **Text Integration Into Image**: Led a project that successfully integrated text into images, culminating in a paper published at the International Conference on Learning Representations (ICLR) Tiny Papers, where I served as the lead author.
- **Artifact Removal**: Conducted research to remove artifacts in virtual try-on and pose transfer tasks, resulting in a paper with a preprint available on arXiv, for which I was the lead author.

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May. 2022 - Dec. 2022

Avatar Creation and Human-Computer Interaction Developer

- **Custom Avatars**: Developed personalized 3D avatars for clients by processing their images, creating tailored digital representations.
- **Human Detection & Tracking System**: Designed and implemented a system using MediaPipe to detect and track human movements in real time.
- **3D Avatar Control**: Integrated live camera data with Godot Engine to enable dynamic, real-time control of 3D avatars, ensuring smooth interaction between users and their avatars.
- **Full Pipeline Development**: Employed PyQt4, Docker, and Godot to build an end-to-end avatar creation system, streamlining the entire avatar-making process from image input to final interactive model.

RESEARCH INTERESTS

Visual and Language Processing

- Computer Vision
- Natural Language Processing (NLP)

AI and Automation

- Machine Learning
- Robotics

Data Analysis

- Data Science
- Data Mining

VOLUNTARY TEACHING EXPERIENCES

- **Robotics**, Instructor: Prof. Javanmardi   *Spring 2024*
  Designed and graded assignments.
- **Embedded systems**, Instructor: Prof. Farbeh   *Spring 2023*
  Designed and graded assignments, midterm and final exam.
- **Linear Algebra**, Instructor: Prof. Amir mazlaghani   *Spring 2022*
  - Head TA of the course.
  - Designed and graded assignments. Also created a game for one of practical assignments.
- **Design of Algorithms**, Instructor: Prof. Shir Ali and Bagheri   *Spring 2022*
  Designed and graded practical assignments

EVENTS EXPERIENCES

- **Linux Fest** at Amirkabir University of Technology   *June 2022*
  As a member of the Technical Staff
- **Game Craft** at Amirkabir University of Technology   *April 2022*
  As a member of the Technical Staff
- **AAISS** (AmirKabir AI Student Summer)   *Jul, 2021 -- Aug, 2021*
  As a member of the Technical Staff

NOTABLE PROJECTS

Artifact Removal

Preprints Available In Arxive

- Official implementation of "A Conditional Inpainting Approach for End-to-End Artifact Removal in VTON and Pose Transfer". Github Link

Text Into Image

ICLR Tiny Paper 2024

- Official implementation of "NO MORE BLAH-BLAH: EMBRACING REAL TEXT IN THE IMAGE SYNTHESIS WORLD". Github Link

Robot Controller

Robotics Course, Prof. Javanmardi

- Controlled a robot using the ROS platform, employing PID controllers and image processing techniques. Github Link

Image Classification

Computational Intelligence Course, Prof. Ebad Zadeh

- Developed an image classification model using a neural network architecture from scratch. Github Link

Document Searching

Information Retrieval Course, Prof. Nick Abadi

- Designed and implemented a search engine tailored for textual documents. Github Link

SKILLS

Programming Languages	Python, Golang, C/C++, JavaScript, HTML, CSS, Kotlin
Machine Learning Tools	PyTorch, Tensorflow, NumPy, OpenCV, Scikit-learn
Game Engine	Unity, GoDoT
Data management & Databases	MySQL, PostgreSQL, Redis
Graphical Design Tools	Adobe Premiere, Adobe After Effects
Frameworks & Programming Knowledge	Django, Fast API, WebSocket, PyQt, Docker, Arduino, ROS
Miscellaneous	Linux, LATEX, Microsoft Office, Git
Hobbies	Soccer, Chess, Hiking , Writing , Cooking

LANGUAGES

English
Professional proficiency
- Planned to take IELTS in Nov. 2024

Persian
Native proficiency

Japanese
Elementary proficiency

ASL
Basic proficiency

REFERENCES

Prof. Maryam Amir mazlaghani
Associate Professor at Amirkabir University of Technology (Tehran Polytechnic)
Email: mazlaghani@aut.ac.ir

Prof. Mahdi Javanmardi
Assistant Professor at Amirkabir University of Technology (Tehran Polytechnic)
Email: mjavan@aut.ac.ir

Prof. Hamed Farbeh
Assistant Professor at Amirkabir University of Technology (Tehran Polytechnic)
Email: farbeh@aut.ac.ir

Prof. Faezeh Gohari
Visiting Professor ar Amirkabir University of Technology (Tehran Polytechnic)
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