Aref Tabatabaei

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EDUCATION

Amirkabir University of Technology (Tehran Polytechnic) *Tehran, Iran*

Bachelor of Science in Computer Engineering *Sep. 2019 - Jan. 2024*

- **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.

Pars Jahd *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

- **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
- **Embedded systems**, Instructor: Prof. Farbeh — *Spring 2023*
  Designed and graded assignments, midterm and final exam.
- **Robotics**, Instructor: Prof. Javanmardi — *Spring 2024*
  Designed and graded 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, Hiking , Writing , Cooking

LANGUAGES

English
Professional proficiency

Persian
Native proficiency

Japanese
Basic 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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