Parham Saremi

Montreal, CA | Email | Webpage | LinkedIn | GitHub | Scholar

Education

McGill University – Mila **Montreal, Canada**
M.Sc. in Electrical and Computer Engineering *2024 – Present*
- Supervised by Prof. Tal Arbel – Overall GPA: 4/4

Sharif University of Technology **Tehran, Iran**
B.Sc. in Computer Engineering *2018 – 2023*
- Overall GPA: 18.70/20 – Overall Major GPA: 19.15/20

Publications

RL4Med-DDPO: Reinforcement Learning for Controlled Guidance Towards Diverse Medical Image Generation using Vision-Language Foundation Models *In Review*
P. Saremi*, A. Kumar*, M. Mohammed, Z. TehraniNasab,, T. Arbel

Conditional Diffusion Models are Medical Image Classifiers that Provide Explainability and Uncertainty for Free *In Review*
P. Saremi*, G. M. Favero*, E. Kaczmarek, B. Nichyporuk, T. Arbel

Towards Reliable Human Pose Forecasting with Uncertainty *IEEE RAL*
S. Saadatnejad, **P. Saremi***, M. Mirmohammadi*, M. Daghyani*, ..., T. Mordan, A. Alahi

Reconstruction of 3D Interaction Models from Images Using Shape Prior *ICCV R6D Workshop*
M. Mirmohammadi, **P. Saremi**, Y.-L. Kuo, X. Wang

Experience

Mila – Quebec Artificial Intelligence Institute **Montreal, Canada**
Graduate Research Student *May 2024 – Present*
- Conducting research in **medical imaging** and **generative modeling** under the supervision of Prof. Tal Arbel.
- Working on **Diffusion Models** for explainability and uncertainty quantification in medical images.
- Trained **stable-diffusion** on medical data and fine-tuned using **policy optimization** to improve alignment by 11%

ETH Zürich – AIT Lab **Zurich, Switzerland (Remote)**
Research Intern *Jul 2022 – Jul 2023*
- Designed and implemented pipelines to generate **3D human and object models** from **single images** while reasoning about their interaction.
- Used the decoder of a pre-trained **VQ-VAE** model to generate object meshes from images.

Node Effect **Hong Kong SAR (Remote)**
.NET Developer – part time *Jul 2022 – Sep 2023*
- Contributed/Co-contributed to many **open-source projects** (Available on my GitHub for review).
- Developed a **MAUI-based application (C#)** and made several contributions to the **Maui Linux project**.
- Worked on **Bitcoin Lightning-related projects**.

EPFL – VITA Lab **Lausanne, Switzerland (Remote)**
Research Intern *Dec 2021 – Jul 2022*
- Developed and maintained **UnPOSed**, an **open-source** toolbox for **forecasting** a sequence of human pose in future.
- Designed and evaluated a method for human motion prediction that **improved the results of various SOTA models** on multiple datasets from **2% to 5%**.

University California Irvine & Sharif University of Technology **Tehran, Iran**
Research Collaborator – B.Sc. Project *Nov 2021 – Jul 2022*
- Worked with **vision-language models** on a joint research project between SUT and UCI for my BSc thesis.
- Designed and developed a multi-modal model using **GNNs and Transformers** to predict cuisine using ingredient information and recipes.

Skills

- **ML Skills:** Python, Pytorch, Pytorch3D, Numpy, Pandas, Sklearn, Matplotlib, HuggingFace, CometML
- **Development & Tools:** Linux, Git, GitHub, LaTeX, Excel, CI/CD, Code Review
- **Programming Languages:** Python, F#, C, C++, Java, C#, MIPS, X86, R