Parsa RAHIMI NOSHANAGH

Doctoral Student
Research Assistant
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Scholar Profile
GitHub Profile
LinkedIn Profile

Education

•EPFL *2022-present*

Doctoral Student EDEE Program, Advisors: Prof. Sebastien Marcel and Prof. Alexandre Alahi

•Sharif University of Technology *2018-2021*

Masters in Electrical Engineering, Advisor: Dr. Arash Amini

Technical Experience

•EPFL/ Idiap *Sep 2022 - present*

PhD Student, Research Assistant Lausanne, Switzerland

- Controlled Image Synthesis: Visual Generative Modeling, Architectures, Conditioning Design (AdaLN, Epipolar Attention, ...), and their paradigms including Autoregressive (e.g., Randomized AR), Diffusion (EDM, SiD, ...), Flows and GANs (e.g., StyleGANs)
- Generative Prior: How we can use the Generative Prior in different tasks including completion in Neural Rendering and or Material Discovery, this drives from the Analysis by Synthesis approach, since we can generate something, we also can analyze it using the generator.

•MCI *July 2021 - August 2022*

Senior Research and Development Engineer Tehran

- I led a team of 6 engineers and researchers for transitioning into modern information representation, like CLIP and BERT
- We built a multi-modal Persian search engine from scratch by designing persian tailored text-encoder and conjunction to CLIP style image encoder and transforme the we crawl to representations into a vector database.

•Master Thesis *July 2018 - May 2021*

Researcher Tehran, Iran

- Computational Photography: Research, Design, and Development of ParaStab, an efficient and robust video stabilization technique, utilizing IMU data of smartphones. This includes modeling todays complex smartphone camera system into differentiable computational dynamic graphs and exploring its application in stabilization and de-blurring tasks. Some Samples
- Compressed Sensing: Dynamic Spectrum Access (DSA) compressive sensing for consecutive empty bands of spectrum.

•Realm Tech *2017-2021*

CEO/CTO, a Computer Vision Company Tehran, Iran

- VR/AR Assisted Surgery: a collaboration with a Hospital to design an augmented view for the surgeon to overlap the X-ray images to the surgeon view, the utilized hardware was Microsoft's HoloLens.
- Automatic Defect Detection: A software for detecting and classifying product defects with few samples, a sample deployed version of this software was in a glass manufacturing pipeline which from the shadow of a glass detects the type of defect and relays it to the control center.
- Fake Document Generator: Due to the limited amount of document data in some languages, we developed software for synthesizing documents for both detection and recognition tasks of OCR.

Selected Publications

•AugGen: Synthetic Augmentation Can Boost Discriminative Models

Parsa Rahimi, Damien Teney, Sébastien Marcel* **Preprint 2025 (underreview)

•Synthetic to Authentic: Transferring Realism to 3D Face Renderings for Boosting Face Recognition

Parsa Rahimi, Behroz Razeghi, Sébastien Marcel* **ECCVw 2024 (Oral) Best Paper

`https://idiap.ch/paper/syn2auth/`

- **Toward responsible face datasets: modeling the distribution of a disentangled latent space for sampling face images from demographic groups**
  Parsa Rahimi, Christophe Ecabert, Sébastien Marcel* **IJCB 2023 (Oral)
  `https://gitlab.idiap.ch/biometric/sg_latent_modeling`

- **Deep Variational Privacy Funnel: General Modeling with Applications in Face Recognition**
  *Behroz Razeghi, *Parsa Rahimi, Sébastien Marcel* **ICASSP 2024 (Oral)**

Teaching Experience

- **Foundation of Computer Vision (Sharif University of Technology)** *Spring 2020*
  Teaching Assistant Tehran, Iran
- **Deep Learning (Sharif University of Technology)** *Fall 2021*
  Teaching Assistant Tehran, Iran
- **Machine Learning (EPFL/Idiap)** *Winter 2023*
  Teaching Assistant Lausanne, Switzerland

Technical Skills and Interests

Languages: Persian (Native), English (Fluent)
Developer Tools: VSCode, Git, CMake
Programming Languages (Proficient): Python, C++/C, CUDA
Programming Languages (Familiar): Go, Rust **Frameworks**: React, Google Workplace suite, Unreal Engine, Unity, ...
Cloud/Databases: Docker, Milvus, Vector Indices, Apptainer
Research Interests: Generative Models, Neural Rendering, Generative Prior, Controlled Synthesis, Fairness, Bias Mitigation, Analysis by Synthesis
Hobbies: Playing my Guitar, Listening to Music, Competitive Programming, Swimming, Hiking