PhD | Computer Vision, LLMs, and Explainable AI Researcher

Sayeh GHOLIPOUR PICHA

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⚡ PROFILE

PhD in healthcare computer vision, focused on improving the interpretability of AI-generated radiology reports using multimodal transformers. Experienced in generative models, visual grounding, and Medical LLMs. Proven ability to translate complex research into real-world applications, with industry and academic experience using Python, PyTorch, and open-source tools.

💼 WORK EXPERIENCE

Nov 2025 (Expected) — Nov 2022

PhD Researcher, ⤤ GIPSA-LAB, GRENOBLE INP

> Designing multimodal models that combine vision and language to assess interpretable radiology reports from chest X-rays.
> Exploring visual grounding and report-text alignment to enhance explainability in AI-assisted diagnosis.
> Training deep learning models using weak supervision on large-scale medical datasets.
> Applied image-text alignment and segmentation techniques on DICOM datasets (MIMIC-CXR).
> Resulted in two publications in high-impact, peer-reviewed journals.

`Python` `PyTorch` `Multimodal Transformers` `CUDA` `GPU` `SLURM` `Git` `Docker` `DICOM` `Pandas`

July 2022 — Feb 2022

Research Intern, ⤤ GIPSA-LAB, GRENOBLE INP

Working on a computer vision research project in GANs to explore the efficacy of generated data in enhancing the performance of Neural Networks in facial expression recognition.

> Training an image translation model for facial expressions. ⤤ Project Description
> Working with the StyleGAN model to generate big data.
> Increasing the accuracy of the facial expression recognition model by 16%.
> Published results at the VISAPP Conference.

`Python` `Tensorflow` `GANs` `Transformers` `GPU` `CNN` `Pandas`

June 2020 — Jan 2018

Research Engineer, ⤤ FARABINA SMART COMPANY

Developing a thermal camera-based device for non-destructive water leak detection.

> Developed a module to detect pipes' cracks and fractures inside a wall with a thermal camera in my role as a junior developer.
> Thermal camera (Flir) image processing and Python programming on Raspberry Pi 3.
> Led to patent registration.

`Thermal Image Processing` `Python` `Raspberry Pi3`

August 2020 — Mar 2018

E-Sales Manager, ⤤ TEESCO

> Launched a new E-commerce branch focused on dental materials and equipment.
> Designed the website and contributed to the development of the mobile application.
> Increased sales by 40% with introducing a fully integrated online shop.

`E-commerce` `CSS` `HTML` `Python`

Dec 2017 — Mar 2017

Data Analyst, ⤤ IROAD ELECTRONIC ARIYA COMPANY

Online traffic counter systems, camera systems, and road data collection systems are used in urban roads and suburban areas.

> Processed and analyzed data received periodically via GSM, containing cars' average speed, traffic counter, and license plate recognition, etc.
> Implemented a SQL module to retrieve and send the processed data to the national road and transportation organization.

`MySQL` `GSM`

September 2016	**Part-time job, ASIA-TECH**
September 2014	Junior Software and Hardware Engineer, testing the new network equipment for Shiraz university establishment.

> Assist in the installation of new network equipment and provide IT support to university dormitories.
> Support and troubleshoot students' software issues.

`Linux`

🎓 EDUCATION

2022 - 2025	**PhD in Computer Vision**, University of Grenoble INP, GIPSA-Lab, France.
2021 - 2022	**MSc in Signal and Image Processing**, University of Grenoble INP, France.
2020 - 2021	**MSc in Data Science, Linking Experiment to Theory**, University of Grenoble INP, France.

📖 PUBLICATIONS

> Sayeh Gholipour Picha; Dawood Al Chanti and Alice Caplier. (2025). Visual interpretation and comprehension of chest X-ray anomalies in the generated report without human feedback. Machine Learning with Applications; ISSN 2666-8270, Volume 21. DOI : 10.1016/j.mlwa.2025.100684

> Gholipour Picha, S.; Al Chanti, D. and Caplier, A. (2024). Semantic Textual Similarity Assessment in Chest X-ray Reports Using a Domain-Specific Cosine-Based Metric. In Proceedings of the 17th International Joint Conference on Biomedical Engineering Systems and Technologies - BIOINFORMATICS; ISBN 978-989-758-688-0; ISSN 2184-4305, SciTePress, pages 487-494. DOI : 10.5220/0012429600003657

> Gholipour Picha, S.; Al Chanti, D. and Caplier, A. (2023). How far Generated Data Can Impact Neural Networks Performance?. In Proceedings of the 18th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications - Volume 5 : VISAPP, ISBN 978-989-758-634-7; ISSN 2184-4321, pages 472-479. DOI : 10.5220/0011629000003417

💻 PROJECTS & COMPETITIONS

Independent and collaborative projects :

THE ENVIRONMENTAL COST OF AI : INCENTIVIZING EFFICIENT SEARCH THROUGH COMPUTATIONAL PENALTIES
DEC 2024   Symposium pour l'électronique et le numérique durables   Project Abstract #4

`CO2 Estimation of GPU Training`

DATA CHALLENGE COMPETITION FOR AUTOMATIC NO-REFERENCE IMAGE SHARPNESS ASSESSMENT IN INFRARED IMAGES
JUNE 2021   Lynred   Project Description

`Python` `Pandas` `YOLOv4` `Matlab` `Saliency Map`

REVIEW REPORT ON THE COMPARISON OF IMAGE DEMOSAICING TECHNIQUES
JAN 2022   Project Description

`Python` `OpenCV` `Denoising` `Scikit-Learn`

AUDIO ENHANCEMENT USING DEEP NEURAL NETWORK
DEC 2021   Project Description

`Python` `Matlab` `Audio Signals` `STFT` `Image Denoising`

🎓 CERTIFICATIONS & AWARDS

Feb 2024	Best Poster Award at the BIOINFORMATICS Conference in Rome, Italy. Certificate
Nov 2023	AutoML Fall School at LMU Munich.
July 2023	Bumblekit Machine Learning Summer School in Healthcare and Biosciences at ETH Zürich.
June 2022	Giving a speech at GDR IASIS Face, gestures, actions, and Behavior seminar at Sorbonne University.
Feb 2022	Facial Expression Recognition with Keras Course. Certificate
2021 - 2022	Granted Persyval Full Scholarship for master's study in France.
June 2019	Programming Fundamentals course from Duke university. Certificate

☰ SKILLS

Programming & Frameworks	Python, PyTorch, TensorFlow, Transformers, C++, MATLAB
Infrastructure & Tools	CUDA, GPU, Docker, SLURM, Git, Linux, Jupyter, Hugging Face
Deep Learning Skills	Multimodal Learning, Semantic Segmentation, Vision-Language Models, Generative Models
Medical Imaging & Data	DICOM, Chest X-rays, Weak Supervision
Project Management	Agile, Documentation

</> LANGUAGE SKILLS

English ● ● ● ● ●
French ● ● ● ○ ○

➕ STRENGTHS

> Adaptability
> Problem-solving
> Critical Thinking
> Perseverance and commitment