Ahmad **Salimi**

Computer Vision Research Assistant · Computer Science Graduate Student

Toronto, Canada

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Experience

Research and Teaching Assistant

Sep. 2023 - Present

Lassonde School of Engineering, York University — *Toronto, Canada*

- Research at CVIL Lab - Under the supervision of Prof. Konstantinos G. Derpanis (scholar): Generative Modeling, especially Diffusion Models and their controllability in the context of 3D Vision
  - Master's thesis title: Geometry-Aware Diffusion Models for Multiview Scene Inpainting (In progress)
  - Designed, implemented, and trained a geometry-aware diffusion model to inpaint 3D scenes, by fine-tuning Stable Diffusion for inpainting, achieving state-of-the-art performance compared to previous work. Worked with PyTorch, PyTorch Lightning, Diffusers, PyTorch3D, Kornia, NeRF Studio, Weights & Biases, etc.
- Teaching Assistantship
  - Computer Vision, Fall 2024: Lab tutorial and grading
  - Advanced Object-oriented Programming, Fall 2023, Winter and Fall 2024, Winter 2025: Lab tutorial and grading

Data Scientist

Oct. 2022 - May. 2023

Hasti Innovative Trading — *Tehran, Iran*

- Fully Automated Pipeline for Training Deep Learning Models
  - Designed a solution to create datasets, train models on GPU, and, deploy results in production using Docker, PyTorch, PyTorch Lightning, and DVC, decreasing development, training, and deployment time by 90%
- Train and Deploy Deep Models
  - Designed and implemented a service-oriented multi-modal search engine for a large collection of online marketplaces, compatible with multi-modal documents and queries
  - Fine-tuned OpenAI CLIP for domain adaptation with 9 million training samples
  - Trained a zero-shot vision-language Transformer-based model to build a session-based recommendation system
  - Developed several microservices with the internal and external APIs using gRPC and gRPC gateway in GoLang and Python
  - Adopted Milvus for fast vector retrieval
  - Deployed the models in Kubernetes, equipped with GPU for inference

Undergraduate Research Assistant

Jun. 2021 - Apr. 2022

EPFL — *Lausanne, Switzerland (Remote)*

VITA Lab - Under the supervision of Prof. Alexandre Alahi (scholar)

- Designed and developed a general PyTorch-based framework to merge any vehicle trajectory prediction datasets and adapted them to a model
- Enhanced the generalization of vehicle motion predictions by training them on multiple existing datasets

Undergraduate Research Assistant

Aug. 2020 - Jul. 2022

AI-Med, Sharif University of Technology — *Tehran, Iran*

Under the supervision of Prof. Hamid R. Rabiee

- Researching Computer-Aided Medical Diagnosis Systems
  - Worked on the interpretability of Computer-Aided Medical Diagnosis Systems
  - Published a book chapter at Springer titled "COVID-19 Diagnosis with Artificial Intelligence". Designed, implemented, and executed the experiments related to the proposed guideline to develop AI models for diagnosis and screening
  - Worked on my Bachelor's thesis titled "Enhancing Interpretability: A Versatile Clue-Based Framework for Faithful In-Depth Interpretations and Knowledge Injection"
- Coordination of Scientific Internship Programs

Software Engineer

Jun. 2019 - Aug. 2020

Mohaymen ICT — *Tehran, Iran*

- Designed a custom RPC framework for inter-microservice APIs and implement them in C# and JavaScript
- Designed and implemented a general graph pattern matching microservice that works with multiple databases such as SQL Server, Oracle SQL, Elasticsearch, …
- Mentorship of Software Engineering Internship

Education

York University

Toronto, Canada

Master of Science in Computer Science — *Sep. 2023 - Aug. 2025*

- GPA: 8.6/9

Sharif University of Technology

Tehran, Iran

Bachelor of Science in Computer Engineering — *Sep. 2018 - May. 2023*

- GPA: 18.15/20

Publications

Submitted Papers

- **Ahmad Salimi**, Tristan Aumentado-Armstrong, Marcus A. Brubaker, Konstantinos G. Derpanis. "Geometry-Aware Diffusion Models for Multiview Scene Inpainting". arXiv preprint.
- Rassa Ghavami Modegh, **Ahmad Salimi**, Alireza Dizaji, Hamid R. Rabiee. "Enhancing Interpretability: A Versatile Clue-Based Framework for Faithful In-Depth Interpretations and Knowledge Injection". Submitted to Elsevier's Journal of Pattern Recognition.

Book Chapters

- Rassa Ghavami Modegh, **Ahmad Salimi**, Sepehr Ilami, et al. "COVID-19 Diagnosis with Artificial Intelligence". In: "The Science behind the COVID Pandemic and Healthcare Technology Solutions". Springer Series on Bio- and Neurosystems. 2022.

Honors & Awards

2023	**VISTA scholarship - $10,000/year for two years**, VISTA, York University	*Toronto, Canada*
2023	**Vector scholarship in AI - $17,500**, Vector Institute for AI	*Toronto, Canada*
2018	**9th Rank among 150k participants**, Iranian National Math-Physics University Entrance Exam	*Iran*
2017	**Gold Medal**, 8th Iranian High School Nanotechnology Olympiad	*Qazvin, Iran*

Languages

Persian Native Language
English Professional Working Proficiency - Academic IELTS: 7/9