

Leili (Lily) Goli

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Research Interests

Computer Vision

Computer Graphics

Robotics

Education

University of Toronto

Ph.D. (Direct Entry) in Computer Science

Toronto, Canada

Sept. 2021 – Expected Nov. 2026

- **Current GPA 4/4**

Sharif University of Technology

B.Sc. in Computer Engineering

Tehran, Iran

Sept. 2017 – Jun. 2021

- **GPA 19.35/20** (equivalent to major GPA of 4/4)

Research Experience

Ph.D. Graduate Research Assistant in University of Toronto

Dynamic Graphics Project (DGP), Department of Computer Science

Supervisor: Professor Alec Jacobson, Professor Andrea Tagliasacchi

Sept. 2021 - Present

Toronto, Canada

- Robustness and Enhancement of Radiance Fields in 3D vision

Student Researcher

Google DeepMind, SynthX Group

Supervisor: Mark Matthews

Dec. 2023 - Present

Remote, Mountain View, US

Student Researcher

Vector Institute, Department of Computer Science

Sept. 2021 - Present

Toronto, Canada

Summer Internship in Technical University of Munich (TUM)

Interdisziplinäres Forschungslabor (IFL), Computer Aided Medical Procedures (CAMP)

Supervisor: Professor Nassir Navab

Jun. 2020 - Mar. 2021

Munich, Germany

- Segmentation of longitudinal chest CT scans of COVID-19 patients and prediction of clinical information.

Summer Research Program in University of British Columbia (UBC)

Robotics and Control Laboratory, Department of Electrical and Computer Engineering

Supervisor: Professor Purang Abolmaesumi

Jun. 2019 - Sept. 2019

Vancouver, Canada

- Ultrasound probe navigation using cardiac ultrasound images.

Research Assistant in Sharif University of Technology

Image Processing Laboratory (IPL), Department of Computer Engineering

Supervisor: Professor Shohreh Kasaei

Sept. 2019 - Mar. 2021

Tehran, Iran

- Robustness of image classification against rotation and scale transformations.

Selected Publications

L. Goli, C. Reading, S. Sellán, A. Jacobson, A. Tagliasacchi, “**Bayes’ Rays: Uncertainty Quantification for Neural Radiance Fields**”, Computer Vision and Pattern Recognition (CVPR) 2024

L. Goli, D. Rebain, S. Sabour, A. Garg, A. Tagliasacchi, “**nerf2nerf: Pairwise Registration of Neural Radiance Fields**”, Accepted to IEEE International Conference on Robotics and Automation (ICRA) 2023, Computer Vision and Pattern Recognition (CVPR) Workshop XRNeRF 2023

L. Goli, ST. Kim, A. Khakzar, N. Navab, “**Longitudinal Quantitative Assessment of COVID-19 Infection Progression from Chest CTs**”, Accepted to Medical Image Computing and Computer Assisted Intervention (MICCAI) 2021.

H. Naderi, **L. Goli**, S. Kasaei, “**Scale Equivariant CNNs with Scale Steerable Filters**”, Accepted to Machine Vision and Image Processing (MVIP) 2020.

Press Coverage

Cover of the Computer Vision News: nerf2nerf with Lily Goli

Story highlight in fxguide News: Stitching NeRFs: ‘nerf2nerf’:Pairwise Registration of Neural Radiance Fields.

Honors and Awards

Robert E. Lansdale/Okino Computer Graphics Graduate Fellowship	\$2000, 2024
Awarded admission to the Master’s program at Sharif University based on academic merit	2021
Ranked 38th in the Iranian National Universities Entrance Exam for Bachelor of Science among more than 150,000 participants.	Aug. 2017
National Elite Foundation Fellowship	2017

Invited Talks

nerf2nerf, Google Geo group, Google	2023
Bayes’ Rays, SynthX group, Google	2023

Work and Teaching Experience

Teaching Assistant at University of Toronto , Toronto, Canada	Fall 2021 - Present
<ul style="list-style-type: none">• Foundations of Computer Science course (CSC110)• Data Science I (JSC270)• Introduction to Image Understanding (CSC420)• Introduction to Machine Learning (CSC311)	
Teaching Assistant at Sharif University of Technology , Tehran, Iran	Fall 2019 - Spring 2021
<ul style="list-style-type: none">• Linear Algebra, Probability and Statistics, Fundamentals of Programming	

Skills

Programming Languages: Python (Proficient), C (Proficient), Java (Proficient), R, MATLAB, HTML, CSS

Frameworks: PyTorch, Keras, Django, QT

Tools: Blender, CLion, PyCharm, IntelliJ, Proteus, Quartus

Operating Systems: macOS, Linux, Windows

Academic Service

Served as Reviewer at CVPR 2024, ICRA 2024, IROS 2023, RA-L 2023.

Organizing 3D Vision Reading Group at University of Toronto

Oct. 2023-Present