

Ashkan Ganj

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Summary

My research interests lie at the intersection of computer vision, 3D vision, and the design of end-to-end computer vision systems. Currently, I am working on the fundamental task of 3D vision: depth estimation, with a focus on improving the accuracy and robustness of existing models. Additionally, I am passionate about designing scalable systems that integrate these advanced models seamlessly into real-world scenarios, such as autonomous driving and mobile AR environments, to enhance their applicability and performance.

Education

Worcester Polytechnic Institute(WPI), Ph.D. in Computer Science Jan 2023 – Present

- GPA: 4.0/4.0

University of Mohaghegh Ardabili(UMA), BE in Computer Engineering Sep 2018 – July 2022

- GPA: 3.8/4.0
- Ranked 2nd among graduating class.
- **Coursework:** Artificial Intelligence, Data Science, Computer Architecture, Computer Network, Operating System, Algorithm

Projects

Accurate Metric Depth Estimation

[Project](#)

- The goal of this project is to propose a new and robust model for depth estimation that only leverages mobile camera features.
- Identified current limitations and challenges of depth estimation models in the mobile AR scenario.
- Proposed new model architectures and solutions that addresses these limitations and challenges.
- Research papers have been accepted at WACV'25, ISMAR'24, and HotMobile'24,.

ExpAR

[Project](#)

- A platform aiming to provide scalable and controllable AR experimentation.
- ExpAR is envisioned to operate as a standalone deployment or a federated platform.
- Research papers has been accepted at immerCom'24 and 23.

Image Classification via Convolutional Neural Networks

[Paper](#)

- Developed a novel image classification architecture leveraging Convolutional Neural Networks (CNNs), focusing on optimizing layer configurations and activation functions for improved feature extraction.
- Achieved state-of-the-art (SOTA) performance on three benchmark datasets: MNIST Digit Recognition, Fashion-MNIST, and Oracle-MNIST, surpassing previous models in accuracy and computational efficiency.

Publications

HybridDepth: Robust Metric Depth Fusion by Leveraging Depth from Focus and Single-Image Priors WACV 2025

Ashkan Ganj, Hang Su, Tian Guo

Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)

ISMAR 2024

Toward Robust Depth Fusion for Mobile AR With Depth from Focus and Single-Image Priors

Ashkan Ganj, Hang Su, Tian Guo

23rd IEEE International Symposium on Mixed and Augmented Reality

Towards In-context Environment Sensing for Mobile Augmented Reality

ImmerCom 2024

Yiqin Zhao, *Ashkan Ganj*, Tian Guo

2nd ACM Workshop on Mobile Immersive Computing, Networking, and Systems

Mobile Depth Estimation: Challenges and Prospects

Hotmobile 2024

Ashkan Ganj, Yiqin Zhao, Hang Su, Tian Guo

The 25th International Workshop on Mobile Computing Systems and Applications(HotMobile24)

Toward Scalable and Controllable AR Experimentation

Ashkan Ganj, Yiqin Zhao, Tian Guo

1st ACM Workshop on Mobile Immersive Computing, Networking, and Systems

ImmerCom 2023

LR-Net: A Block-based Convolutional Neural Network for Low-Resolution Image Classification

Ashkan Ganj, Mohsen Ebadpour, Mahdi Darvish Hamid Bahador

Iranian Journal of Science and Technology, Transactions of Electrical Engineering

Journal 2023

Professional Experience

Graduate Research Assistant, WPI – Worcester, MA, USA

Software Engineer, Access Endless Communication(AEC) – Tehran, IRAN

• Front-end Web developer.

May 2024 – Present

Sep 2021 – May 2022

Teaching Experience

Graduate Teaching Assistant, WPI – Worcester, MA, USA

• CS 2303 - Systems Programming Concepts(C-term, Spring 2023)

• CS 2119 - Application Building with Object-Oriented Concepts(D-term, Spring 2023)

• CS 1101 - Introduction to Program Design(A-term, Fall 2023)

• CS 4233 - Object-Oriented Analysis and Design(B-term, Fall 2023)

• CS 4233 - Object-Oriented Analysis and Design(C-term, Spring 2024)

• CS 2102 - Object-Oriented Design concepts(D-term, Spring 2024)

Jan 2023 – May 2024

Teaching Assistant, University of Mohaghegh Ardabil (UMA) – Ardabil, IRAN

• Algorithm and Data Structure(Fall 2021)

• Software Engineering(Spring 2021)

• Discrete Mathematics(Fall 2022)

Sep 2021 - Dec 2022

Awards

• Awarded Travel Grant, ACM HotMobile 2024 Workshop.

• Awarded best paper runner-up award at ImmerCom'23.

• Awarded Travel Grant, ACM SIGCOMM 2023 conference.

• Awarded distinguished student, in the department of electrical and computer engineering.

• UMC programming contest winner.

2024

2023

2023

2022

2020

Technical Skills

Languages: Python, C++ , C, C#, SQL, JavaScript, TypeScript

Technologies: Pytorch, Tensorflow, Numpy, Pandas, SQL-based Databases, NoSQL Databases, Vue Js, Angular, Django, Flask