

Kian (Mohammad) Kianpisheh

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🌐 <https://kianpisheh.github.io/>

Summary: I am a PhD candidate in Computer Science at the University of Toronto, working under the supervision of Prof. Khai Truong in the Dynamic Graphics Project (DGP) lab. My research lies at the intersection of ubiquitous computing and applied machine learning, focusing on the development of personalized and customizable smart assistants for real-world applications. I design and develop intelligent systems that empower end-users to customize the system behaviour based on their individual habits, preferences, and environment.

EDUCATION

University of Toronto

Sep 2018-Present

Ph.D. candidate in Computer Science, DGP lab

Personalized Ubiquitous Intelligent Systems

Advisor: Prof. Khai Truong

Sharif University of Technology

2015-2017

M.Sc. in Electrical Engineering, (Computer Vision, Scene Understanding)

Advisor: Prof. Mohammad Sharifkhani

Shahed University

2009-2014

B.Sc. in Electrical Engineering, (Image Processing)

Advisor: Prof. Alireza Behrad

RESEARCH AND PUBLICATIONS

Kianpisheh M, Mariakakis A, Truong KN. SAHARA: Self-supervised Approach for Human Activity Recognition based on Everyday Audio Events. (under review)

Kianpisheh M, Mariakakis A, Truong KN. exHAR: An Interface for Helping Non-Experts Develop and Debug Knowledge-based Human Activity Recognition Systems. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. 2024 Mar 6;8(1):1-30.

Kianpisheh M, Li FM, Truong KN. Face recognition assistant for people with visual impairments. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. 2019 Sep 9;3(3):1-24.

Kianpisheh M, Content-based Video Retrieval in Traffic Videos using Latent Dirichlet Allocation Topic Model. 2017 Sep, arxiv

EXPERIENCE

Mathsronauts (part time)

2022-2023

Software developer, (Python; Pytorch, computer vision)

KLDigital Tech (part time)

2021-2022

Software developer, (Python (Django), React, Redux)

University of Toronto-Teaching Assistant

Courses: Image Understanding, Programming on the Web (lead TA), Data Structures and Analysis, Introduction to Computer Vision, Introduction to Programming, and many more.

Sharif University of Technology-Teaching Assistant

Courses: Computer Vision, Introduction to Machine Learning, Logic Circuits.

SELECT LIST OF TECHNICAL PROJECTS

SAHARA: An audio-based self-supervised human activity recognition system. The system automatically clusters repetitive audio events and characterizes the user's activity based on those detected events.	2025
IMUdio: A smartwatch human activity recognition system based on audio and IMU sensor data. A lightweight deep learning model that fuses audio and IMU data embeddings to recognize human activities, with inference performed directly on a smartwatch.	2024
exHAR: An Interface for Helping Non-Experts Develop and Debug Human Activity Recognition Systems. An explainable framework that enables users to personalize sensor-based human activity recognition systems.	2024
SensorLab: A data visualization tool for wearable devices and smartphone IMU sensor data. A visualization web application that shows the spectrogram of IMU (i.e., accelerometer and gyroscope) sensors data.	2023
ActivityLab: A data visualization tool for wearable devices and smartphone sensors data. A web-based visualization application that depicts human activity datasets as a chronological sequence of events. Users can program the system in If-This-Then-That format.	2022
Face recognition assistant for people with visual impairments. A smart wearable camera that automatically captures faces of people the user interacts with. It filters out low-quality images (poor lighting, extreme head poses, motion blur) to ensure reliable face classification.	2020
CBVR: Content-based Video Retrieval using Latent Dirichlet Allocation Topic Model. The system detects traffic patterns using Topic Models. A GUI allows users to search for specific patterns efficiently.	2017

REFERENCES

Khai N. Truong (Professor, Department of Computer Science, University of Toronto)

Alex Mariakakis (Assistant Professor, Department of Computer Science, University of Toronto)

Mohammad Sharifkhani (Associate Professor, Department of Electrical Engineering, Sharif University of Technology)