

Muhammad Kamran Janjua

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EDUCATION

University of Alberta

Masters of Science in Computing Science, CGPA 3.80/4.00

Supervisor [Prof. Martha White](#)

Thesis [Online Predictions, RL and Water Treatment: A GVF Story](#)

Edmonton, Canada

Sept. 2021 – Jun 2023

National University of Sciences and Technology (NUST)

Bachelors of Science in Computer Science, CGPA 3.71/4.00

Islamabad, Pakistan

Sept. 2016 – Jun 2020

PUBLICATIONS ([GOOGLE SCHOLAR](#))

(* INDICATES EQUAL CONTRIBUTION)

Kamran Janjua, A. Ghasemabadi, Kunlin Zhang, M. Salameh, Chao Gao, Di Niu

[Grounding Degradations in Natural Language for All-In-One Video Restoration](#) Under Review at ICCV'25

Negar Hassanpour, **Kamran Janjua**, Kunlin Zhang, et. al.

[Paper](#)

[Fantastic Multi-Task Gradient Updates and How to Find Them In a Cone](#)

Under Review at ICML'25

A. Ghasemabadi*, **Kamran Janjua***, M. Salameh, Di Niu

[Paper](#) / [Code](#) / [Page](#) / [Poster](#)

[Learning Truncated Causal History Model for Video Restoration](#)

NeurIPS'24

A. Ghasemabadi, **Kamran Janjua**, M. Salameh, C. Zhou, F. Sun, Di Niu

[Paper](#) / [Code](#)

[CascadedGaze: Efficiency in Global Context Extraction for Image Restoration](#)

TMLR'24

Kamran Janjua, H. Shah, M. White, E. Miah, M.C. Machado, A. White

[Paper](#) / [Code](#)

[GVFs in the Real World: Making Predictions Online for Water Treatment](#)

MLJ'23

Y. Hou, **Kamran Janjua**, J. Kannala, A. Solin

[Paper](#) / [Code](#)

[Movement-Induced Priors for Deep Stereo](#)

ICPR'20

S. Nawaz, **Kamran Janjua**, I. Gallo, A. Mahmood, A. Calefati, F. Shafait

[Paper](#)

[Do Cross Modal Systems Leverage Semantic Relationships?](#)

ICCVW'19

S. Nawaz*, **Kamran Janjua***, I. Gallo, A. Mahmood, A. Calefati

[Paper](#) / [Code](#)

[Deep Latent Space Learning for Cross-Modal Mapping of Audio and Visual Signals](#)

DICTA'19

A. Calefati*, **Kamran Janjua***, S. Nawaz, I. Gallo

[Paper](#) / [Code](#)

[Gitloss for Deep Face Recognition](#)

BMVC'18

WORK EXPERIENCE

Edmonton Research Center (ERC), Huawei Technologies Canada Co. Ltd

Jun 2023 – Present

Machine Learning Researcher

- I work on machine perception problems related to video processing and understanding, and learning problems related to continual and meta learning.
- My work focuses on designing methods and algorithms for online motion, and video understanding for various tasks such as video restoration, interpolation, and prediction including designing online video processing algorithms and learning meta-parameters online. I also explore how large vision foundation models can serve as knowledge priors for video understanding problems.

Reinforcement Learning and Artificial Intelligence Lab (RLAI)

Sept 2021 – Jun 2023

Graduate Research Assistant

[Advisor](#) [Prof. Martha White](#)

- I worked on designing temporal difference learning algorithms (TD) to make online anticipatory predictions in high-volume and non-stationary systems.
- I also studied offline-to-online RL where the goal was to jump-start online RL agents by learning policies offline.

Qatar Computing Research Institute (QCRI)

Jan 2021 – Aug 2021

Research Intern

[Advisor](#) [Prof. Hassan Sajjad](#)

- I worked on understanding how neurons in a deep neural network (either individually or compositionally) work towards reaching a decision from input to the output.

- The work focused on analyzing how a trained architecture’s internal state can be explained by mapping it to high-level concepts instead of relying on feature attribution methods.

Machine Learning Research Group, Aalto University

Jun 2019 – Nov 2019

Visiting Research Intern

Advisor [Prof. Arno Solin](#)

- I worked on depth estimation from unstructured multi-view image pose pairs. The task was to utilize cheap hardware on mobile devices and estimate depth following a stereo setup. We re-formulated the problem as a non-parametric learning task by introducing a temporal movement-induced Gaussian process prior for inter-frame reasoning. Our proposed gyroscope-driven kernel utilized low-quality MEMS sensors, and lifted the requirement of having full 6D camera poses.

Applied Recognition Technology Laboratory, University of Insubria

Mar 2018 – Sept 2018

Visiting Research Intern

Advisor [Prof. Ignazio Gallo](#)

- I worked on multi-modal representation learning, mainly focusing on learning to project multiple modalities (images, audio, text) onto a shared latent space without utilizing multiple neural networks. I also explored the role of semantic relationships in the shared latent space for retrieval and verification tasks.

TEACHING EXPERIENCE

CMPUT 267 - Machine Learning I

Fall 2021, Winter 2022

University of Alberta, Edmonton, Canada

Introduction to Machine Learning

Winter 2020

National University of Sciences and Technology (NUST), Islamabad, Pakistan

Data Structures and Algorithms

Fall 2018

National University of Sciences and Technology (NUST), Islamabad, Pakistan

AWARDS & ACCOLADES

Graduate Research Scholarship, University of Alberta

2021-2023

Fully-funded scholarship for graduate studies (MSc. thesis).

Value: 25,197/yr CAD

UEAwards 2020, CAMP@TUM, Munich, Germany

Summer 2020

Undergraduate Excellence Award (UEAwards) is awarded to top 5 undergraduate students.

Value: 5900 CAD

UG Star Researcher 2020, NUST, Pakistan

2020

UGStar Researcher competition across the EECS school. I won the competition and the title.

Value: 150 CAD

Aalto Science Institute Summer Internship, Espoo, Finland

Summer 2019

I was awarded the research internship in ML group at Aalto University.

Value: 8900 CAD

Research Competition, Ulster University, UK

2019

All Pakistan research poster competition. I won third prize.

Value: 550 CAD

Dean’s List for High Achievers

2016–2020

All semesters during undergraduate studies.

Value: 550 CAD

TECHNOLOGIES ([GITHUB](#))

Backend — Python, C++, SQL

Deep Learning/Machine Learning — PyTorch, Tensorflow, JAX

Tools — Git, SLURM, Bash, Linux Server Management, AWS, GCP

REVIEW EXPERIENCE

ICML 2025, ICLR 2025, AAAI PC Member 2025, NeurIPS 2024, CVPR 2024, 2025

REFERENCES

Prof. Martha White — Associate Professor, University of Alberta, Edmonton, Canada — whitem@ualberta.ca

Prof. Di Niu — Professor, University of Alberta, Edmonton, Canada — dniu@ualberta.ca

Dr. Mohammad Salameh — Principal Scientist, Huawei Technologies, Canada — mohammad.salameh@huawei.com

Prof. Hassan Sajjad — Associate Professor, Dalhousie University, Halifax, Canada — hsajjad@dal.ca

Prof. Arno Solin — Assistant Professor, Aalto University, Espoo, Finland — arno.solin@aalto.fi