Kamran Janjua

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Education

University of Alberta — Edmonton, Canada
Masters of Science in Computing Science, CGPA 3.80/4.00 — Sept. 2021 – Jun 2023
Supervisor Prof. Martha White
Thesis Online Predictions, RL and Water Treatment: A GVF Story

National University of Sciences and Technology (NUST) — Islamabad, Pakistan
Bachelors of Science in Computer Science, CGPA 3.72/4.00 — Sept. 2016 – Jun 2020

Publications (Google Scholar)

K. Janjua, A. Ghasemabadi, M. Salameh, Di Niu — Paper / Code
Learning Truncated Causal History Model for Video Restoration — NeurIPS'24

A. Ghasemabadi, **K. Janjua**, M. Salameh, C. Zhou, F. Sun, Di Niu — Paper / Code
CascadedGaze: Efficiency in Global Context Extraction for Image Restoration — TMLR'24

K. Janjua, H. Shah, M. White, E. Miahi, M.C. Machado, A. White — Paper / Code
GVFs in the Real World: Making Predictions Online for Water Treatment — MLJ'23

Y. Hou, **K. Janjua**, J. Kannala, A. Solin — Paper / Code
Movement-Induced Priors for Deep Stereo — ICPR'20

S. Nawaz, **K. Janjua**, I. Gallo, A. Mahmood, A. Calefati, F. Shafait — Paper
Do Cross Modal Systems Leverage Semantic Relationships? — ICCV'19

K. Janjua, S. Nawaz, I. Gallo, A. Mahmood, A. Calefati — Paper / Code
Deep Latent Space Learning for Cross-Modal Mapping of Audio and Visual Signals — DICTA'19

K. Janjua, A. Calefati, S Nawaz, I. Gallo — Paper / Code
Gitloss for Deep Face Recognition — BMVC'18

Work Experience

Edmonton Research Centre (ERC), Huawei Technologies Canada Co. Ltd — Jun 2023 – Present
ML Researcher

- 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 am working on designing and optimizing low-level computer vision algorithms to run on mobile hardware, mainly related to mobile camera pipelines.

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 (online TD) to make online anticipatory predictions in high-volume, and non-stationary systems.
- I also looked at offline-to-online RL where the goal was to jump-start online RL algorithms by learning 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 combined to form groups) work towards reaching a decision from input to the output.
- The work was solely focused on analyzing how a trained architecture's internal state can be explained by mapping it to high-level concepts instead of attributing features.

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 worked on lifting the restriction of 6dof pose information as part of ego-motion for depth estimation tasks since it is not generally available on smartphones.

Applied Recognition Technology Laboratory, University of Insubria Mar 2018 – Sept 2018
Visiting Research Intern Advisor Prof. Ignazio Gallo

- I worked on discriminatory embedding of two different modalities onto a shared latent space. Contemporary approaches employ multiple networks for each modality without working to capture the semantics between them, my work focused on exploring semantic relationships in the shared latent space for improved correlation and retrieval results.

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

Technologies (Github)

Backend — Python, C++, SQL

Deep Learning/Machine Learning — PyTorch, Tensorflow, JAX

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

Review Experience

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

References

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

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

Prof. Adam White — Assistant Professor, University of Alberta, Edmonton, Canada — amw8@ualberta.ca

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