

ASIF KHAN

Ph.D. Student in Machine Learning

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📍 University of Edinburgh, UK

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RESEARCH EXPERIENCE

Research Intern

Huawei Research London

📅 September 2021 - December 2021 📍 London, UK

👤 Supervisor: Dr. Haitham Bou-Ammar

Developed a trust region combinatorial **Bayesian optimisation** solution for antibody sequence design.

Research Intern

Sony Stuttgart Technology Center

📅 March 2019 - August 2019 📍 Stuttgart, Germany

👤 Supervisor: Dr. Fabien Cardinaux

Developed a **generative adversarial network** for unsupervised speech-to-speech conversion.

Research Assistant

Smart Data Analytics, University of Bonn

📅 Oct 2017 - Sept 2018 📍 Bonn, Germany

👤 Supervisor: Prof. Jens Lehmann

Developed a representation learning method to incorporate attribute and relational triples for improving link prediction in **knowledge graphs**.

Research Assistant

Bio-Ontology Research Group, KAUST

📅 Jan 2016 - May 2017 📍 Jeddah, Saudi Arabia

Provided machine learning expertise for solving Life Science problems.

- Developed an ontology aware **hierarchical neural network** to predict Gene Ontology (GO) function from protein sequences.
- Developed a novel method for **representation learning** of nodes and relations in biological **knowledge graphs**.

Research Intern

Rapid Rich Object Search Lab, Nanyang Technological University

📅 May 2015 - July 2015 📍 Singapore

👤 Supervisor: Prof. Alex Kot

Developed deep **convolutional neural networks** for fine-grained classification of visually similar handbags.

PUBLICATIONS

- **A Khan**, Amos Storkey, *HALO* HAmiltonian Latent Operator for content and motion disentanglement in image sequences. In NeurIPS 2022.
- **A Khan**, Amos Storkey, Adversarial robustness of β -VAE through the lens of local geometry. In Workshop on New Frontiers in Adversarial Machine Learning, ICML 2022.
- **A Khan** et. al, Trust-region Bayesian optimisation with developability constraints enables sample efficient, high-affinity antibody design. In The 2022 ICML Workshop on Computational Biology.
- Other Publications 📄

RESEARCH INTERESTS

- Generative models & Bayesian Inference.
- Physics priors in deep neural networks.
- Geometry for representation learning and generative modelling.

EDUCATION

Ph.D., Machine Learning

University of Edinburgh, UK

📅 2019 - Present, 👤 Advisor: Prof. Amos Storkey

MSc., Computer Science

🎓 *Excellent. GPA: 1.1 (best: 1.0, worst: 5.0)*

University of Bonn, Germany

📅 2017 - 2019, 👤 Advisor: Prof. Asja Fischer

BTech., Electronics and Communication GPA: 8.94/10.0

LNM Institute of Information Technology, India

📅 2012 - 2016, 👤 Advisor: Prof. R. Gangopadhyay

SKILLS

Python C SQL SPARQL MATLAB
Pytorch Tensorflow Sklearn
Probabilistic Modeling Deep Learning Dynamical Systems
Geometric Deep Learning Signal Processing

REVIEWING

AISTATS 2023, ML4PS NeurIPS 2022, NeurIPS 2022, ICLR 2022 (Highlighted Reviewer), AISTATS 2022 (Top Reviewer), ML4PS NeurIPS 2021.

TEACHING

University of Edinburgh

📅 Oct 2019 - Present

- Tutor and Marker for Probabilistic Modeling and Reasoning
- Marker for Machine Learning Practical
- Marker for Introductory Applied Machine Learning
- Marker for Data Mining and Exploration

University of Bonn

📅 Oct 2017 - Feb 2019

- Teaching Assistant for Knowledge Graph Analysis