

Education

University of Alberta, Edmonton, Canada

ualberta.ca

M.SC. COMPUTER SCIENCE (THESIS-BASED)

Jan. 2021 - Current

Teaching Assistant: Introduction to Computer Science(CMPUT101)

National University of Sciences and Technology, Islamabad, Pakistan

nust.edu.pk

BACHELOR OF SOFTWARE ENGINEERING

Sep. 2015 - Jul. 2019

Teaching Assistant: Data Structures & Algorithms, Computer Networks

Final Year Project: An Open-World Extension to Knowledge Graph Completion Models

Research Papers

H. Shah, J. Villmow, A. Ulges. "Relation Specific Transformations for Open World Knowledge Graph Completion". COLING-2020 [workshop paper]

[Paper](#) - [Code](#)

HOSCHULE RHEINMAIN UNIVERSITY OF APPLIED SCIENCES, GERMANY

We introduced relation specific transformations to substantially improve the performance of Open World Knowledge Graph Completion models. We also proposed an approach for clustering of relations to reduce the training time and memory footprint.

H. Shah, J. Villmow, A. Ulges, U. Schwanecke, F. Shafait. "An Open-World Extension for Knowledge Graph Completion Models". AAAI-2019 [oral paper]

[Paper](#) - [Code](#)

HOSCHULE RHEINMAIN UNIVERSITY OF APPLIED SCIENCES, GERMANY

We propose an extension that enables any existing Knowledge Graph Completion model to predict facts about the open-world entities. This approach is more robust, more portable and has better performance than the published state of the art on most datasets. We also released a new dataset that overcomes the shortcomings of previous ones.

H. Shah, K. Javed, F. Shafait. "Distillation Techniques for Pseudo-rehearsal Based Incremental Learning". 2018

[Paper](#) - [Code](#)

TUKL-NUST RESEARCH AND DEVELOPMENT CENTER, PAKISTAN

Standard neural networks suffer from catastrophic forgetting when they are trained on incrementally arriving stream of i.i.d. data. To combat this forgetting, one approach is to train GANs on previously arrived data and feed it to the network again. In this paper, we highlighted that this method is biased and proposed an approach to mitigate this bias and reduce the effect of catastrophic forgetting.

Work Experience

Learning and Visual Systems Group, Hochschule RheinMain, Germany

RESEARCH ASSISTANT

Jan. 2020 - Dec. 2020

Worked on the topic of semantic code search, which involves searching for relevant code based on natural language queries with Dr. Adrian Ulges.

Learning and Visual Systems Group, Hochschule RheinMain, Germany

RESEARCH INTERN

Jun. 2018 - Sep. 2018

I worked on the topic of Open World Knowledge Graph Completion under the supervision of Dr. Adrian Ulges.

TUKL-NUST Research and Development Center, NUST, Pakistan

RESEARCH ASSISTANT

Jun. 2017 - Dec. 2017

I worked on the topics of image retrieval and continual learning with Khurram Javed and Dr. Faisal Shafait.

Honors & Awards

- 2019 **AAAI:** Student travel award for Honolulu, Hawaii
- 2018 **DAAD:** Funded summer research exchange to Germany
- 2016 **ACM:** Winner of the ACM Softcom design competition