

## Education

### National University of Sciences and Technology, Islamabad, Pakistan

[nust.edu.pk](http://nust.edu.pk)

BACHELORS OF ENGINEERING IN SOFTWARE ENGINEERING

Sep. 2015 - Jul. 2019 (expected)

CGPA: 3.69/4.00

## Research Experience

### Hochschule RheinMain: Learning and Visual Systems Group (LAVIS)

[lavis.cs.hs-rm.de](http://lavis.cs.hs-rm.de)

RESEARCH INTERN

2018

I worked here under the supervision of Dr. Adrian Ulges as a part of my summer research exchange (which was funded by DAAD). My work here resulted in a publication accepted to AAAI-19 on the topic of Zero-shot Knowledge Graph Completion.

### NUST: TUKL-NUST Research and Development Center

[tukl.seecs.nust.edu.pk](http://tukl.seecs.nust.edu.pk)

RESEARCH ASSISTANT

2017 - present

I worked here under the supervision of Dr. Faisal Shafait on various different Machine Learning projects, mostly related to Computer Vision. Currently, I am working on my Final Year Thesis project here (which is also related to Knowledge Graph Completion).

## Research Papers

### H. Shah, J. Villmow, A. Ulges, U. Schwanecke, F. Shafait. "An Open-World Extension for Knowledge Graph Completion Models". Accepted to AAAI-2019 (16.4% acceptance rate)

[haseebshah.io/papers/owe](http://haseebshah.io/papers/owe)

HOSCHULE RHEINMAIN UNIVERSITY OF APPLIED SCIENCES, GERMANY

Jun. 2018 - Sep. 2018

Current Knowledge Graphs Completion (KGC) models are incapable of predicting facts about entities unknown to them. I proposed an extension that enables any existing KGC model to predict these facts. This approach is more robust, more portable and has better performance than the published state of the art on most datasets. I 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

[haseebshah.io/papers/incremental](http://haseebshah.io/papers/incremental)

TUKL-NUST RESEARCH AND DEVELOPMENT CENTER, PAKISTAN

Feb. 2018 - May 2018

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, I showed that the techniques based on this approach are biased and proposed a framework to mitigate this bias and reduce the effect of catastrophic forgetting by utilizing AC-GAN.

## Selected Projects

### Retrieval of Visually Similar Garment Images

[haseebshah.io/projects/garment](http://haseebshah.io/projects/garment)

PYTHON | TENSORFLOW

June 2017

The purpose of this system is to return a set of visually similar images of clothing items for a given input image. The system must be capable of recognising the clothing item in the given image and extract the design pattern. I adapted the techniques used in face recognition to this problem and achieved a performance that beats the published state of the art in this domain.

### WikiHunt: Wikipedia Search Engine

[haseebshah.io/projects/wikisearch](http://haseebshah.io/projects/wikisearch)

RUBY | MYSQL | SINATRA | HTML | CSS

Dec. 2016

This is a scalable search engine capable of returning relevant Simple Wikipedia results quickly. It involved generation of forward and inverted indices followed by calculation of IR scores to get relevant results. The implementation was profiled and optimized for performance.

## Photron Image Translator

[haseebshah.io/projects/photron](https://haseebshah.io/projects/photron)

C# | XAML

Dec. 2015

Windows 10 Universal application (works on Desktop, Phone, Xbox and Hololens) that takes an image as an input, extracts the text from it using OCR and translates the text to the desired language. It has more than 25,000 downloads and won Adduplex App of the Day Award.

## Volunteer Experiences

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- 2018 **Teaching Assistant:** Data Structures and Algorithms
- 2018 **Teaching Assistant:** Computer Networks
- 2018 **Teaching Assistant:** 1st PPRS (Pakistan Pattern Recognition Society) Autumn School on Deep Learning
- 2016 **AIESEC:** Branding and Communications team

## Honors & Awards

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- 2019 **AAAI:** Student Travel Award for Honolulu, Hawaii
- 2018 **DAAD:** Funded summer research exchange to Germany
- 2016 **ACM:** Winner of Softcom design competition
- 2016 **Hackerrank:** Bronze medal on Week of Code 26
- 2016 **AdDuplex:** ROYAL App of the Day award