Hussain Hussain

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Google Scholar: scholar.google.com/citations?user=CEeLGfQAAAAJ

EDUCATION

- **PhD in Computer Science (Ongoing)**   Dec 2019 – Dec 2024
  Graz University of Technology   Graz, Austria
  - Focus: **Machine learning on graphs**
  - Advisor: Dr. Roman Kern

- **MSc in Computer Science; *graduated with distinction***   Oct 2017 – Nov 2019
  Graz University of Technology   Graz, Austria
  - Thesis title: **Graph Embedding for Trust-based Recommender Systems**

- **BE in Information Technology; *graduated with distinction***   Oct 2011 – Dec 2016
  Al-Baath University (5 years program)   Homs, Syria
  - Thesis title: **Sign Language Recognition** [code]

EXPERIENCE

- **Research Assistant**   Dec 2020 – Present
  Graz University of Technology   Graz, Austria
  - **Publishing research** in data science and machine learning venues.
  - **Advising** master's and bachelor's projects/theses.
  - **Holding a lecture** on graph machine learning at KDDM2 course [link].
  - **Supervising projects** of KDDM2 [link] and NLP [link] courses through the Data Team at TU Graz [link].

- **Data Science Researcher**   May 2019 – Present
  Know Center GmbH   Graz, Austria
  - **Natural language processing.** Implemented an **information extraction** solution with **weakly supervised learning**.
  - Devising a **text-aware knowledge graph completion** method. Leveraging BERT's context-awareness via neighborhood aggregation.

- **Software Engineer**   Nov 2017 – May 2019
  SSI Schäfer Software Solutions GmbH   Graz, Austria
  - Implementing **communication protocols** within an automated logistic system.
  - Defining and detecting **system deadlocks** and implementing test units for corner cases.

- **Graduate Teaching Assistant**   Mar 2017 – Jul 2017
  Al-Baath University   Homs, Syria
  - Holding labs for **Algorithms and Data Structures** and **Data Mining**.

PUBLICATIONS

1. **Hussain Hussain**, Tomislav Duricic, Elisabeth Lex, Denis Helic, Roman Kern
   The interplay between communities and homophily in semi-supervised classification using graph neural networks, *Applied Network Science 6, 80 (2021).* [paper] [code]

2. **Hussain Hussain**, Tomislav Duricic, Elisabeth Lex, Denis Helic, Markus Strohmaier, Roman Kern
   Structack: Structure-based Adversarial Attacks on Graph Neural Networks, *Proceedings of the 32st ACM Conference on Hypertext and Social Media. 2021.* [paper] [code]

3. **Hussain Hussain**, Tomislav Duricic, Elisabeth Lex, Roman Kern, Denis Helic
   On the Impact of Communities on Semi-supervised Classification Using Graph Neural Networks - *International Conference on Complex Networks and Their Applications 2020, 15-26.* [paper] [code]

4. Mario Lovrić, Tomislav Duricic, Han TN Tran, **Hussain Hussain**, Emanuel Lacić, Morten A Rasmussen, Roman Kern
Should We Embed in Chemistry? A Comparison of Unsupervised Transfer Learning with PCA, UMAP, and VAE on Molecular Fingerprints, *Pharmaceuticals 14 (8), 758.* [paper]

5. Xinglan Liu, **Hussain Hussain**, Houssam Razouk, Roman Kern
Effective Use of BERT in Graph Embeddings for Sparse Knowledge Graph Completion, *ACM/SIGAPP 2022 790-793*

6. Tomislav Duricic, **Hussain Hussain**, Emanuel Lacic, Dominik Kowald, Denis Helic, Elisabeth Lex
Empirical Comparison of Graph Embeddings for Trust-Based Collaborative Filtering - *International Symposium on Methodologies for Intelligent Systems 2020, 181-191.* [paper]

TECHNICAL SKILLS

- **Languages.** Python, Java, C++.
- **Tools/Frameworks.** Tensorflow, Pytorch, NetworkX, Pytorch Geometric, SpaCy.

ACHIEVEMENTS AND AWARDS

○ Catalyst Coding Contest: 1st place in Graz **(top 1% worldwide)**.	Nov 2019
○ Kaggle iWildCam 2019 challenge **(ranked top 7%)**: classifying trap photos of wild animals.	Jun 2019
○ ACM-ICPC (programming contest) **world finalist** and **regional medalist** [Full ICPC record].	2013-2018
○ Catalyst Coding Contest: 2nd place in Graz **(top 5% worldwide)**.	Apr 2018
○ **First Graduate Award** at Al-Baath University, Faculty of Information Technology. *Awarded to the graduate with the highest total GPA. Ranked $1/\sim 150$.*	Dec 2016

SERVICES

○ Organizing the **TU Graz Data Team** (solving public data challenges, e.g., on Kaggle).	May 2019 – Present
○ **Coaching** teams for ACM-ICPC programming contests.	2014 – 2018
○ **Judge** and **problem setter** at several ACM-ICPC contests.	2015 – 2018
○ **Organizing and directing** ACM-ICPC local contests.	2016 – 2017