Mubashara Akhtar

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Scientific Interests

automated fact-checking, multimodal reasoning, benchmarking & LLM evaluation, information retrieval, language modeling, in-context learning, numerical reasoning with LLMs

Education

PhD in Natural Language Processing, King's College London since Oct 2020
– Advisor: Prof. Elena Simperl, Dr. Oana Cocarascu
– Topic: Multimodal Evidence Integration for Robust Automated Fact-Checking
– Expected thesis submission: Summer 2024

Visiting PhD student, University of Cambridge Jan - June 2023
– Host: Prof. Andreas Vlachos
– Visiting the NLIP research group
– Project on automated evaluation of evidence retrieval for automated fact-checking

BSc & MSc in Computer Science, TU Wien Oct 2011 - Jan 2020
– Minor in business
– Grade Master's Degree: 1.6 (comparable to UK first)
– Grade Bachelor Degree: 2.1 (comparable to UK 2.1)
– Thesis: Evaluation of User Interaction in the Telecommunication Industry

Selected Publications

ChartCheck: An Evidence-Based Fact-Checking Dataset over Real-World Chart Images.
Mubashara Akhtar, Nikesh Subedi, Vivek Gupta, Sahar Tahmasebi, Oana Cocarascu, Elena Simperl.
CoRR abs/2311.07453.

Exploring the Numerical Reasoning Capabilities of Language Models: A Comprehensive Analysis on Tabular Data.
Mubashara Akhtar, Abhilash Shankarampeta, Vivek Gupta, A. Patil, Oana Cocarascu, Elena Simperl.
Findings of Annual Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2023.

Multimodal Automated Fact-Checking: A Survey.
Mubashara Akhtar, Z. Guo, Michael Schlichtkrull, Oana Cocarascu, Elena Simperl, Andreas Vlachos.
Findings of Annual Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2023.

Reading and Reasoning over Chart Images for Evidence-based Automated Fact-Checking.
Mubashara Akhtar, Oana Cocarascu, Elena Simperl.
Findings of Annual Conference of the European Chapter of the Association for Computational Linguistics (**EACL**), 2023.

PubHealthTab: A Public Health Table-based Dataset for Evidence-based Fact Checking.
Mubashara Akhtar, Oana Cocarascu, Elena Simperl.
Findings of Annual Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), 2022.

Work Experience

Student Researcher, Google Deepmind (Zurich, Switzerland)   July - Nov 2023
– Host: Julian Eisenschlos
– Project on open-domain question answering with text, tables, and semi-structured data

Teaching Assistant, King's College London (London, UK)   Sept 2021 - Dec 2022
– Course: Python programming for data scientists
– Responsibilities: coursework co-design, lab supervision, marking of programming projects

Data Scientist, Mayato AT (Darmstadt, Germany)   Jan 2019 - Sept 2020
– German smart speaker project for Europe's largest telecom provider, **Deutsche Telekom AG**
– Language model development for recognising users' intents given interactions with the smart speaker
– Technologies: Python (PyTorch, transformers, scikit-learn, nltk, etc.), MS LUIS, git, etc.

Java Software Engineer, Ebcont GmbH (Vienna, Austria)   Oct 2017 - Dec 2018
– Developed a fraud detection tool for Austrian Ministry of Finance
– Technologies: Java, Openshift, Camunda, Spring Boot, Maven, Hibernate, etc.

Research Assistant, TU Wien (Vienna, Austria)   Feb - Dec 2017
– Machine learning project in cooperation with telecom company, T-Mobile Austria
– Researched on user modelling and clickstream prediction; reported to head of data lab at T-Mobile

Statistics Consultant, United Nations (Vienna, Austria)   Sept - Dec 2015
– Analysed trends in the manufacturing industry in MENA countries
– Reported to chief statistician at the United Nations Industrial Development Organisation (UNIDO)

Teaching Assistant, TU Wien (Vienna, Austria)   Mar - July 2014
– Institute of Computer Graphics & Algorithms; Institute of Statistics & Math. Methods in Economics
– Taught groups of 20 students; prepared and reviewed math and programming assignments/labs

Service & Scientific Experience

Co-Lead Responsible AI committee, Croissant ML Dataset Format, MLCommons	since Aug 2023
Organisation committee FEVER workshop, co-located with EACL '23, EMNLP '24	since Oct 2022
Organisation King's College London KG Lab's weekly seminar group	Dec 2020 - Dec 2022
Teaching Assistant, Oxford Machine Learning Summer School	July 2021
Organisation of a Women in ML (WiML) Workshop at NeurIPS 2020	Dec 2020
ACM Summer School on Recommender Systems	Aug 2017

Supervision/Mentoring

Evie Stergiopoulou, King's Undergraduate Research Fellowship	since July 2023
Anmol Dadlani, Master's thesis, King's College London	Feb - Aug 2023
Francesco Torregrossa, Master's thesis, King's College London	Feb - Aug 2023
Wen Ting Choi, Master's thesis, King's College London	Feb - Aug 2023

Grants & Awards

– Research Impact Award, King's College London NMES PhD competition, 2023
– King's College London NMES Faculty Studentship Award (Total £79, 9223), 2020-2024
– European Forum Alpbach scholarship for the years 2020/21 (5% acceptance rate), 2020
– US Embassy of Austria's Austria to Austin Entrepreneurship program, 2019
– Ban Ki-moon Center for Global Citizens mentorship (mentored by TU Wien vice-rector), 2019
– Research scholarship from TU Wien for master's thesis, 2017
– ACM RecSys summer school and conference grant from TU Wien, 2017
– Merit-based scholarship from TU Wien, 2012-2016
– Top 1% with 1.0 grade at Austrian high school final exam (summa cum laude)

Media & Outreach

Talk at iPragma group, Google Deepmind	Zurich, Switzerland (2023)
Plenary talk at the European Forum Alpbach 2023	Alpbach, Austria (2023)
Talk at Alan Turing Visualization Interest Group 5th Symposium	London, UK (2023)
Panel moderation A digital Future with Human Values, Austrian Embassy UK	London, UK (2023)
Interview for the podcast FrauenFunk, City Council of Vienna	Vienna, Austria (2021)

Extra-Curricular

President, Club Alpbach London	Oct 2022 - Nov 2023
Board member, Club Alpbach Vienna	Oct 2020 - Sept 2022
Board member (2015 - 2020) and scouts leader, Scouts in Austria	since 2013

Qualifications & Skills

Technical Competences

– Programming (expert): Python (PyTorch, Huggingface transformers, spaCy, scikit-learn, etc.), R, Java (Hibernate, Maven, Spring Boot, Mockito, Elasticsearch, JSF, etc.)
– Programming (experience): C#, JavaScript, HTML
– Other: AWS, Openshift Cloud, Git, PostgreSQL, MongoDB, Amazon Mechanical Turk, Scrum

Languages: native in German and Urdu; fluent in English; advanced in Latin; beginner in French

References

Prof. Elena Simperl & Dr. Oana Cocarascu, King's College London	Supervisor
Prof. Andreas Vlachos, University of Cambridge	Collaborator, research visit host
Dr. Michael Schlichtkrull, University of Cambridge	Collaborator
Dr. Zhijiang Guo, Huawei Noah's Ark Lab	Collaborator
Dr. Vivek Gupta, University of Pennsylvania	Collaborator
Julian Eisenschlos, Google Deepmind	Internship host