Daniel Hershcovich

Department of Computer Science, University of Copenhagen, Lyngbyvej 2, 2100 Copenhagen Ø · +45 53 33 88 04 · dh@di.ku.dk · danielhers.github.io · orcid.org/0000-0002-3966-8708

FOCUS AREAS Natural Language Processing: Multilinguality, Cultural Bias/Adaptation, Sustainability.

EMPLOYMENT

Tenure-Track Assistant Professor, University of Copenhagen. Since 1/3/2020.

Postdoctoral Researcher, University of Copenhagen. 1/3/2019–29/2/2020.

Teaching Assistant, Hebrew University of Jerusalem. 1/7/2015–31/8/2018.

Researcher and Software Engineer, IBM Research. 1/8/2008–31/1/2019.

EDUCATION

Ph.D., Computational Neuroscience, Hebrew University of Jerusalem. 10/10/2019.
Dissertation: *Universal Semantic Parsing with Neural Networks.*
Advisors: Ari Rappoport and Omri Abend.
Focused on the semantic structure of natural language, and the application of neural networks to natural language processing. Developed a parser for UCCA, a cross-linguistically applicable framework for semantic representation, which builds on extensive typological work, and supports rapid annotation.

M.Sc., Computational Neuroscience, Hebrew University of Jerusalem. 22/07/2017.

B.Sc., Mathematics and Computer Science, Open University of Israel. 29/11/2010.

RESEARCH GRANTS

Haptic Captioning—Using Natural Language Models to Design Haptic Experiences. Co-PI (with Hasti Seifi). Villum Experiment (17% acceptance). 2023–2025. 2,000,000 DKK.
From simple vibrations to touchable holograms in midair, haptic signals enable us to feel virtual or remote content and people. Past research has shown than people have a rich language for describing the feel of haptic signals. This project explores the use of natural language processing techniques for predicting user descriptions of haptic signals and guiding haptic signal design. The project focuses on creating sensory language models and human-AI interaction for collecting data and updating the models.

Mining the Meaning: A semantic parsing approach to the study of literary change. Co-PI (with Jens Bjerring-Hansen). Data+, University of Copenhagen (31% acceptance). 2021–2023. Total 1,013,000 DKK.
The project explores the literary and social modernization of Scandinavian societies during the latter part of the 19th century. Unlike traditional historiography, MiMe employs advanced natural language processing (NLP) techniques and semantic analysis to examine a broad corpus of 895 Danish and Norwegian novels published between 1870 and 1900. The project's methodology includes developing state-of-the-art computational semantic methods and training large language models towards written late 19th-century Danish and Norwegian. The project also integrates existing conceptual knowledge resources and develops methods for incorporating extra-linguistic information in semantic parsing and analysis.

Multilingual semantic parsing from grounding in Wikidata. Postdoctoral Excellence Fellowship, Israeli Council for Higher Education. 2019–2020. Total 100,000 USD.

HONORS AND AWARDS

Outstanding Paper Awards at ACL 2017 and 2023.
ACL 2017: A Transition-Based Directed Acyclic Graph Parser for UCCA
ACL 2023: What's the Meaning of Superhuman Performance in Today's NLU?
Shimon Peres Doctoral Fellowship 2015.
Google Europe Scholarship for Students with Disabilities 2015.

ACADEMIC
ACTIVITIES

Organizer:
EMNLP 2022 (workshop co-chair),
HPLT & NLPL Winter School 2023 (program co-chair),
Israel 2017 Seminar of Computational Linguistics,
CoNLL 2019–2020 Shared Tasks on Meaning Representation Parsing,
SemEval-2019 Task 1 on Cross-lingual Semantic Parsing.

Guest Editor: Künstliche Intelligenz Special Issue: NLP and Semantics. 2021.

Program Committee Member: 30+ academic conferences, workshops and journals.

TEACHING

University of Copenhagen:
Lecturer & Course organizer, *Natural Language Processing* 2019–2023.
Lecturer & Course organizer, *Introduction to Data Science* 2023.
Lecturer, *Introduction to Machine Learning* 2020.

SUPERVISION

Postdoc co-supervisor, Ali Al-Laith (2022–2025, with Jens Bjerring-Hansen), Guimin Hu (2023–2024, with Hasti Seifi).
PhD co-supervisor, Ruixiang Cui (2021–2024, with Anders Søgaard), Nina S. Schneidermann (2022–2024, with Bolette S. Pedersen), Alexander Conroy (2022-2024, with Jens Bjerring-Hansen).
MSc supervisor, Ruixiang Cui (2020), Wei Cheng (2021), Héctor R. Murrieta-Bello (2021), Martin M. M. Birkmand (2021), Xiaoyu Shi (2022), Nikolaus A. Schrack (2022), Marcus A. Hansen (2022), Lukas Mikelionis (2023), Oliver H. Breinholst (2023), Morten K. Thomsen (2023), Fengmao Wang (2023), Zi Wang (2023), Benjamin Paddags (2023), Rasmus Jensen (2023), Christoffer Hansen (2023), Martin Strøh (2023).
BSc supervisor, Thor S. Larsen (2020), Mads F. Petersen (2020), Matilde B. Ritchie (2021), Jonathan S. Musso (2023), Axel Højmark (2023), Christian M. Jensen (2023).

COMMUNITY

IT Team Member, Københavns Fødevarefællesskab. Since 2020.

Web Development Project Leader, Public Knowledge Workshop, Israel. 2013–2019.

LEAVE

Parental leave, May 20–August 31, 2021; October 20, 2023–January 15, 2024.