

Verna Dankers

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Education

- 2020-2025 **Ph.D. at the UKRI Centre for Doctoral Training in Natural Language Processing**, University of Edinburgh, Scotland
- *Supervisors*: Prof. Dr. Ivan Titov, Dr. Christopher Lucas
 - *Research focus*: interpretability analyses for memorization and non-compositionality in NLP.
 - The program is jointly run by the School of Informatics and the School of Philosophy, Psychology and Language Sciences, and includes a taught component (equivalent to a one-year M.Sc. degree), that I used to study language evolution. Average grade: 81/100 (an A2 grade, equivalent to a 4.0 GPA).
 - Expected graduation in the spring of 2025.
- 2017-2019 **M.Sc. in Artificial Intelligence**, University of Amsterdam, Netherlands
- Graduated *cum laude*. Average grade: 9.1/10
 - *Master's Thesis Supervisors*: Dr. Ekaterina Shutova, Dr. Martha Lewis
 - *Research focus*: multitask learning for metaphor detection, published at EMNLP 2019.
- 2014-2017 **B.Sc. in Artificial Intelligence**, University of Amsterdam, Netherlands
- Graduated *cum laude* and *with honors*. Average grade: 9.3/10
 - *Bachelor's Thesis Supervisors*: Prof. Dr. Raquel Fernández, Dr. Aysenur Bilgin

Employment

- 2024 **Research intern at Microsoft Research, Machine Translation team**, Seattle, USA
- *Research focus*: Memorization inheritance in knowledge distillation for machine translation.
 - *Manager*: Vikas Raunak
 - Worked on-site from June to September, was employed remotely from October to December via [Appen](#).
- 2022-2023 **Contingent worker at FAIR labs at Meta, employed via [Magnit](#)**, Edinburgh, Scotland
- 2022 **Research scientist intern at FAIR labs at Meta**, Paris, France
- *Research focus*: Per-datum memorization in machine translation, published at EMNLP 2023.
 - *Managers*: Dr. Dieuwke Hupkes, Dr. Brenden Lake

Conference Publications

- 2024 **Generalisation first, memorisation second? Memorisation localisation for natural language classification tasks**
Verna Dankers and Ivan Titov. In *Findings of the Association for Computational Linguistics ACL 2024*, pages 14348-14366 [[paper](#), [code](#)]
- 2023 **Memorisation cartography: mapping out the memorisation-generalisation continuum in neural machine translation**
Verna Dankers, Ivan Titov and Dieuwke Hupkes. In *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing*, pages 8323-8343 [[paper](#), [code](#)]
- 2023 **Non-compositionality in sentiment: new data and analyses**
Verna Dankers and Christopher G. Lucas. In *Findings of the Association for Computational Linguistics: EMNLP 2023*, pages 5150-5162 [[paper](#), [code](#)]
- 2023 **Paper bullets: Modeling propaganda with the help of metaphor**
Daniel Rodríguez, Verna Dankers, Preslav Nakov and Ekaterina Shutova. In *Findings of the Association for Computational Linguistics: EACL 2023*, pages 472-489 [[paper](#)]

- 2022 **Recursive neural networks with bottlenecks diagnose (non-)compositionality**
Verna Dankers and Ivan Titov. In *Findings of the Association for Computational Linguistics: EMNLP 2022*, pages 4361–4378 [paper, code]
- 2022 **Can Transformer be too compositional? Analysing idiom processing in neural machine translation**
Verna Dankers, Christopher G. Lucas and Ivan Titov. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 3608–3626 [paper, code]
- 2022 **The paradox of the compositionality of natural language: a neural machine translation case study**
Verna Dankers, Elia Bruni and Dieuwke Hupkes. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 4154–4175 [paper, code]
- 2022 **Meta-Learning for fast cross-lingual adaptation in dependency parsing**
Anna Langedijk, Verna Dankers, Phillip Lippe, Sander Bos, Bryan Cardenas Guevara, Helen Yannakoudakis and Ekaterina Shutova. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 8503–8520 [paper]
- 2021 **Episodic memory demands modulate novel metaphor use during event narration**
Vesna Djokic, Verna Dankers and Ekaterina Shutova. In *Proceedings of the Annual Meeting of the Cognitive Science Society*, 43 [paper]
- 2021 **Generalising to German plural noun classes, from the perspective of a recurrent neural network**
Verna Dankers*, Anna Langedijk*, Kate McCurdy, Adina Williams and Dieuwke Hupkes. In *Proceedings of the 25th Conference on Computational Natural Language Learning*, pages 94–108. *Equal contribution. [paper, code]
Best paper award.
- 2020 **The Pragmatics behind Politics: Modelling metaphor, framing and emotion in political discourse**
Pere-Lluis Huguet Cabot, Verna Dankers, David Abadi, Agneta Fischer and Ekaterina Shutova. In *Findings of the Association for Computational Linguistics: EMNLP 2020*, pages 4479–4488 [paper]
- 2019 **Modelling the interplay of metaphor and emotion through multitask learning**
Verna Dankers, Marek Rei, Martha Lewis and Ekaterina Shutova. In *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP)*, pages 2218–2229 [paper]

Journal Publications

- 2023 **A taxonomy and review of generalization research in NLP**
Dieuwke Hupkes, Mario Giulianelli, Verna Dankers, Mikel Artetxe, Yanai Elazar, Tiago Pimentel, Christos Christodoulopoulos, Karim Lasri, Naomi Saphra, Arabella Sinclair, Dennis Ulmer, Florian Schottnmann, Khuyagbaatar Batsuren, Kaiser Sun, Koustuv Sinha, Leila Khalatbari, Maria Ryskina, Rita Frieske, Ryan Cotterell and Zhijing Jin. In *Nature Machine Intelligence*, volume 5, pages 1161–1174 [paper]
- 2020 **Compositionality decomposed: How do neural networks generalise?**
Dieuwke Hupkes, Verna Dankers, Mathijs Mul and Elia Bruni. In *Journal of Artificial Intelligence*, 67, pages 757–795 [paper, extended abstract]

Workshop Publications

- 2023 **Latent feature-based data splits to improve generalization evaluation: A hate speech detection case study**
Maike Züfle, Verna Dankers and Ivan Titov. In *GenBench: The first workshop on generalisation (benchmarking) in NLP*, p. 112 [paper, code]
- 2020 **Being neighbourly: Neural metaphor identification in discourse**
Verna Dankers, Karan Malhotra, Gaurav Kudva, Volodymyr Medentsiy, and Ekaterina Shutova. In *Proceedings*

of the Second Workshop on Figurative Language Processing, pages 227–234 [paper]

2019 **Transcoding compositionally: Using attention to find more generalisable solutions**
Kris Korrel, Dieuwke Hupkes, **Verna Dankers** and Elia Bruni. In *Proceedings of the 2019 ACL Workshop BlackboxNLP: Analyzing and Interpreting Neural Networks for NLP*, pages 1–11 [paper]

2017 **Modelling word associations with word embeddings for a guesser agent in the Taboo city challenge competition**
Verna Dankers, Aysenur Bilgin, and Raquel Fernández. In *The 6th ESSENCE Workshop: the Taboo city challenge competition @ IJCAI-2017* [paper]

Preprints

2024 **Evaluating subword tokenization: Alien subword composition and OOV generalization challenge**
Khuyagbaatar Batsuren, Ekaterina Vylomova, **Verna Dankers**, Tsetsuukhei Delgerbaatar, Omri Uzan, Yuval Pinter, and Gábor Bella. *Preprint* [paper]

Service

Workshop organization

2025 **L2M2**: The first workshop on Large Language Model Memorization @ ACL 2025
2024 **GenBench**: The second workshop on generalization (benchmarking) in NLP @ EMNLP 2024
2023 **GenBench**: The first workshop on generalization (benchmarking) in NLP @ EMNLP 2023

Area chair

2025 NAACL
2024 EACL, ACL

Reviewer

2024 FigLang workshop, Computational Linguistics
2023 ACL (outstanding reviewer award), CoNLL, EMNLP, ARR, BlackboxNLP workshop, Computational Linguistics
2022 ACL, EMNLP, ARR, BlackboxNLP workshop, FigLang workshop
2021 CoNLL (outstanding reviewer), ARR, BlackboxNLP workshop

Honors & Awards

2023 Outstanding reviewer award at ACL 2023, Toronto, Canada
2022 Staff award for the role of teaching assistant in the FNLP course, University of Edinburgh, Scotland
2021 The Best Paper Award, awarded at the CoNLL conference, Punta Cana, Dominican Republic
2020–2025 Ph.D. Funding, UKRI CDT in NLP, University of Edinburgh, Scotland
- Full scholarship covering tuition fees, program costs and stipend (approx. £80,000 for 4 years).
2017–2019 ASML Technology Scholarship, Veldhoven, Netherlands
- Awarded a €10,000 scholarship and participated in a two-year professional development program
2017 ESSENCE Workshop: Taboo city challenge competition @ IJCAI, 2nd price, Melbourne, Australia

Teaching Experience

2021–2024 **Teaching Support at the School of Informatics**, University of Edinburgh, Scotland
- *Teaching Assistant* for the undergraduate course Foundations of NLP. As a TA, I designed new course materials for the course’s tutorials, updated programming labs and designed a new assessed assignment. I was the point of contact for any questions from the students via the Piazza platform.
Staff award for independently creating course material and exceptional engagement with students.
- *Tutor* for the Accelerated Natural Language Processing postgraduate course. As a tutor, I organized weekly tutorials for 10 - 20 students.
- *Marker* for assignments from the Researching Responsible and Trustworthy NLP course for first-year PhD students.

- *Marker* for assignments from the Doing Research in NLP course for first-year PhD students.

- 2019-2020 **Teaching Assistant M.Sc. program Artificial Intelligence**, University of Amsterdam, Netherlands
- *Courses taught*: Statistical Methods of Natural Language Semantics, Advanced Techniques of Computational Linguistics, Natural Language Processing 2.
 - *Responsibilities*: independently supervised research projects during courses, co-supervised M.Sc. dissertations, gave guest lectures on ‘multitask learning’.
- 2015-2018 **Teaching Assistant B.Sc. program Artificial Intelligence**, University of Amsterdam, Netherlands
- *Courses taught*: Introduction to Logic, Introduction to Artificial Intelligence, Linguistics and Language Processing, Linear Algebra, Fundamentals of Fuzzy Logic.
 - *Responsibilities*: organized weekly tutorials for 20 students, graded homework and exams.

Supervision

- 2024 Márk Bodrácska. I co-supervise Márk’s M.Sc. in AI thesis project about memorization localization in LLMs.
- 2023 Maike Züfle. I co-supervised Maike’s M.Sc. in AI thesis project (published at the GenBench 2023 workshop).
- 2021 Daniel R. Baleato. I co-supervised Daniel’s M.Sc. in Data Science thesis project (published at EACL 2023).
- 2019 Karan Malhotra, Gaurav Kudva, Volodymyr Medentsiy. I co-supervised their M.Sc. in AI research project (published at the Figlang 2020 workshop).
- 2019 Anna Langedijk, Sander Bos, Bryan Cardenas Guevara. I co-supervised their M.Sc. in AI research project (published at ACL 2022).

Competences

- **Technical Skills**: Python (*advanced*), Latex (*advanced*), Matlab (*intermediate*), Prolog (*beginner*), Java (*beginner*), C++ (*beginner*), R (*beginner*), Bash (*beginner*)
- **Languages**: Dutch (*native*), English (*fluent*, TOEFL 119/120), German (*intermediate*), French (*pre-intermediate*)

Community Building & Outreach

- 2020-2024 I think the role of a researcher encompasses more than contributing to teaching and research and also involves providing **peer support**, and contributing to **public engagement**:
- For two years in a row, I co-organized the CDTalks event at my university, a monthly NLP seminar for CDT in NLP students. I also co-organized a writing retreat for Ph.D. students.
 - I am a Mental Health First Aider at my university, qualified from 2021 to 2024 by MHScot.
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- I am a STEM ambassador in Scotland, and as an ambassador, I volunteered at [DataKirk](#) between September 2021 and June 2023. DataKirk is an organization with the mission to introduce children and young adults of ethnic minorities to data science and coding to improve data literacy. During school seasons, I hosted the weekly [Data Literacy Club](#) for children aged 8 - 13, about programming in Python, data science, and basic artificial intelligence.
 - In December 2020 and throughout the year 2024, I was a part of the “[I’m a Scientist](#)” initiative, that connects primary school classes with scientists for Q&A sessions.

Last updated: January 21, 2025