


Liesbeth Allein, PhD

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Research interests

Human-inspired natural language processing. I integrate human reasoning mechanisms (e.g., temporal and social reasoning) in neural network-based models for context-aware language understanding. Integration, optimisation, and grounding methods are often inspired by findings from the social sciences, showcasing the benefits of cross-disciplinary approaches. Computational tasks on which I work include diverse text generation, fact-checking and fake news detection, hate speech recognition, and implicit language understanding.

Academic positions

- 2024 – *Postdoctoral Researcher*. Department of Computer Science, KU Leuven (BE).
Visiting Researcher. Department of Translation, Interpreting and Communication, Ghent University (BE).
- 2019 – 2024 *Doctoral Researcher*. Department of Computer Science, KU Leuven (BE).
- 2020 – 2021 *Doctoral Researcher*. Joint Research Centre (JRC), European Commission (IT).
- 2020 *Visiting Researcher*. Department of Computer Science, University of Copenhagen (DK).
- 2019 *Research Intern*. Department of Computer Science, KU Leuven (BE).

Degrees in higher education

- 2024 *Ph.D. Engineering Science: Computer Science*. KU Leuven (BE).
Thesis title: *Machine learning models for the verification of information and detection of disinformation*.
Advisors: Marie-Francine Moens (supervisor), Hendrik Blockeel and Jesse Davis
Examination Committee: Dirk Vandermeulen, Véronique Hoste (Ghent University, BE), Domenico Perrotta (European Commission Joint Research Centre, IT), Andreas Vlachos (University of Cambridge, UK)
- 2019 *M.Sc. Artificial Intelligence*. KU Leuven (BE). Major: Speech and Language Technology. Grade: Cum Laude.
Thesis title: *Automatic prediction and correction of Dutch pronouns die and dat using recurrent neural networks*, supervisor: Marie-Francine Moens
- 2017 *M.A. Multilingual Communication*. Ghent University (BE). Major: Dutch, English, German. Grade: Magna Cum Laude.
Thesis title: *Beer experts and sensory experiences: the case of review writing*, supervisor: Els Lefever
- 2016 *B.A. Applied Linguistics*. Ghent University (BE). Major: Dutch, English, German. Grade: Cum Laude.
Four-month Erasmus exchange at University of Limerick (IE) in the B.A. Applied Linguistics program (2015).

Awards and fellowships

Fellowships

- 2020 *Collaborative Doctoral Partnership Grant*. European research grant for grantholder position at the Joint Research Centre (JRC), European Commission (IT).
Short-Term Scientific Mission Grant. European travel grant to conduct research at the University of Copenhagen (DK) as visiting researcher.

Awards and fellowships (continued)

2015 *Erasmus+ Grant*. European travel grant to study at the University of Limerick (IE).

Awards

2017 *Beste Paper Award* at HUSO 2017.

Projects

2022 – 2025 *iTRUST*

- Postdoctoral researcher
- Topic: Interventions against polarisation in society for trustworthy social media
- CHIST-ERA project
- European consortium with Warsaw University of Technology (PL), Università della Svizzera italiana (CH), KU Leuven (BE), Artificial Intelligence Research Institute (ES), and UC Louvain (BE)

2024 *CALCULUS*

- Postdoctoral researcher
- Topic: Commonsense and Anticipation enriched Learning of Continuous representations sUpporting Language UnderStanding.
- European Research Council (ERC) under the Horizon 2020 Advanced Grant 788506.

2019 – 2023 *ML4Disinformation*

- Doctoral researcher
- Topic: Machine learning models for the verification of information and detection of disinformation
- Collaborative doctoral partnership between KU Leuven (BE) and the Joint Research Centre of the European Commission (IT)

2020 *Multi3Generation*

- Visiting researcher
- Topic: Multi-task, multilingual, and multi-modal language generation
- EU COST Action with partners from University of Copenhagen (DK), KU Leuven (BE), and many others.

Teaching

Spring 2022 *Science Communication: Informatics* [GoD81A]. Department of Computer Science, KU Leuven, Belgium (teaching assistant).

Teaching (continued)

Autumn 2019 *Principles of Programming* [GoN28A]. Department of Computer Science, KU Leuven, Belgium (teaching assistant).

Research advisor

Master students

2023 – 2024 *Hugo Vervier* (CS, KU Leuven)
2022 – 2023 *Ignacio Avas* (MAI, KU Leuven, 1 accepted long paper at ECIR 2024), *Thibault Smets* (CS, KU Leuven)
2021 – 2022 *Aytug Altin* (CS, KU Leuven), *Marlon Saelens* (CS, KU Leuven, 1 long paper at EACL 2023), *Quinten De Neve* (CS, KU Leuven)
2020 – 2021 *Lotte Verheyden* (CS, KU Leuven)
2019 – 2020 *Pieter Roeyen* (MAI, KU Leuven)

Invited talks

27/6/2023 *Addictions to social media: How to combat them?* Panel member at event on "Mindless Scrolling - How social media gets your kids hooked?", European Parliament (BE).
8/11/2022 *Annotating the truth: The holy grail of falsehood detection.* Talk at scientific meeting "Methods and applications in text mining and analytics", Joint Research Centre, European Commission (IT).
1/6/2022 *A timely ranking of evidence for fact-checking.* Talk at Sony Computer Science Laboratories (FR).
11/5/2022 *Is artificial intelligence a cure for fake news?* Talk at "Tech me out", Pint of Science Festival (BE).
19/2/2022 *Can a computer recognise fake news?* Lecture at STEM University, KU Leuven (BE).

Publications

Articles in international journals

- 1 **L. Allein**, M.-F. Moens, and D. Perrotta, "Preventing profiling for ethical fake news detection," *Information Processing & Management*, vol. 60, no. 2, p. 103 206, 2023, (impact factor = 8.6).
- 2 **L. Allein**, I. Augenstein, and M.-F. Moens, "Time-aware evidence ranking for fact-checking," *Journal of Web Semantics*, vol. 71, p. 100 663, 2021, (impact factor = 2.5).
- 3 **L. Allein**, A. Leeuwenberg, and M.-F. Moens, "Automatically correcting Dutch pronouns "die" and "dat"," *Computational Linguistics in the Netherlands Journal*, vol. 10, pp. 19–36, 2020.

Papers in proceedings of international conferences and workshops

- 1 **L. Allein** and M. F. Moens, "OrigamIM: A dataset of ambiguous sentence interpretations for social grounding and implicit language understanding," in *Proceedings of the 3rd Workshop on Perspectivist Approaches to NLP (NLPerspectives)@ LREC-COLING 2024*, 2024, pp. 116–122.
- 2 I. Avas, **L. Allein**, K. Laenen, and M.-F. Moens, "Align MacridVAE: Multimodal alignment for disentangled recommendations," in *European Conference on Information Retrieval*, Springer, 2024, pp. 73–89.
- 3 **L. Allein**, M. Saelens, R. Cartuyvels, and M. F. Moens, "Implicit temporal reasoning for evidence-based fact-checking," in *Findings of the Association for Computational Linguistics: EACL 2023*, 2023, pp. 176–189.

- 4 L. **Allein** and M.-F. Moens, “Checkworthiness in automatic claim detection models: Definitions and analysis of datasets,” in *Disinformation in Open Online Media: Second Multidisciplinary International Symposium, MISDOOM 2020, Leiden, The Netherlands, October 26–27, 2020, Proceedings 2*, Springer, 2020, pp. 1–17.
- 5 E. Lefever, L. **Allein**, and G. Jacobs, “In the eye of the beer-holder: Lexical descriptors of aroma and taste sensations in beer reviews,” in *HUSO 2017: The Third International Conference on Human and Social Analytics, (best paper award)*, IARIA, 2017, pp. 25–29.

Book chapters

- 1 R. Li, L. **Allein**, D. Sileo, and M.-F. Moens, “When do discourse markers affect computational sentence understanding?” In *Discourse Markers in Interaction: From Production to Comprehension*, M.-J. Cuenca and L. Degand, Eds., vol. 376, Walter de Gruyter GmbH & Co KG, 2022, pp. 159–190.

Reports

- 1 E. Gajewska, K. Budzynska, B. Konat, *et al.*, *Linguistically analysing polarisation on social media, (contributor)*, Laboratory of The New Ethos – Warsaw University of Technology, 2023.
- 2 K. Budzynska, C. Reed, M. Stede, *et al.*, *Framing in communication: From theories to computation (Dagstuhl seminar 22131)*, (**contributor**), Dagstuhl Reports, 2022.

Member of program committees

COLING 2025

ACL 2023, MISDOOM 2023, SocialNLP 2023

MISDOOM 2022

WASSA 2021

Service and leadership to university

2022 – *Faculty Board Member*. Faculty of Engineering Science, KU Leuven (BE).

2021 – *Faculty Council Member*. Faculty of Engineering Science, KU Leuven (BE).

Languages

Fluent: Dutch, English

Good: German, French

Italian