

Konstantinos Kogkalidis

CURRICULUM VITAE

Structure-Aware Machine Learning | Neurosymbolic Integration
Syntax-Semantics Interface | Computational Syntax | Type & Proof Theory

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Personal Information

Date of Birth 19 July 1991
Nationality Greek
Current residence Bologna, Italy
Pronouns he/him
Email konstantinos@riseup.net
Website konstantinoskokos.github.io

Academia

09/2024 - 02/2025 **Visiting Researcher**
Institution University of Bologna

07/2023 - today **Postdoctoral Researcher** in *Neurosymbolic Machine Learning*
Institution Artificial Intelligence & Machine Learning Group, Aalto University

09/2018 - 12/2022 **PhD Candidate** in *Computational Linguistics*
Institution Utrecht Institute of Linguistics, Utrecht University
Thesis [Dependency as Modality, Parsing as Permutation](#)
Promoters Michael Moortgat & Richard Moot
Committee A. v. d. Bosch, M. Sadrzadeh, J. Bos, S. Clark, S. Chatzikyriakidis
Awards [E. W. Beth Dissertation Prize](#), FoLLI (2024)

09/2017 - 07/2019 **Research MSc** in *Artificial Intelligence* (120 EC, cum laude)
Track Logic & Reasoning
Institution Graduate School of Natural Sciences, Utrecht University

11/2010 - 05/2017 **Engineering Diploma** in *Electrical & Computer Engineering* (300 EC, MSc equivalent)
Track Electronics & Computers
Institution Department of Engineering, Aristotle University of Thessaloniki

Industry

02/2024 - 12/2024 **ML Research Scientist** at [skyfora](#)
Physics-informed deep learning for localized weather forecasting.

07/2017 - 09/2018 **ML Research Scientist** at [geekbot](#)
Unsupervised representation learning for short & unstructured text at scale.

Teaching

2022 - 2023 Compositional Models of Vector-Based Semantics (ESSLI 2022, guest)
2021 - 2022 Logic & Language (UU AI MSc, guest, TA)
2020 - 2021 Logic & Language (UU AI MSc, main instructor)
2019 - 2020 Machine Learning for Human Vision & Language (UU AI MSc, TA)

2018 - 2019 Logic & Language (UU AI MSc, tutorials, TA)
Advanced Topics in Cognitive Modeling (UU AI MSc, TA)

Scholarships, Grants & Awards

12/2024	Concurrent Programming and Lambek Calculi (Working Visit)
Awarded Amount	1.500 €
Awarding Body	Royal Netherlands Academy of Arts and Sciences (KNAW)
Host Institution	University of Groningen
Host	Jorge Pérez
07/2024	E. W. Beth Dissertation Prize (Best Dissertation)
Awarded Amount	1.500 €
Awarding Body	The Association for Logic, Language and Information (FoLLI)
09/2023	Neural Premise Selection for Agda (Short-Term Scientific Mission)
Awarded Amount	1.330 €
Awarding Body	European Research Network on Formal Proofs (EuroProofNet)
Host Institution	Chalmers
Host	Jean-Philippe Bernardy

All my academic contributions below (papers, code, slides, etc.) are open-source and available through my website.

Publications & Preprints

PhD Thesis

[Dependency as Modality, Parsing as Permutation](#)

In *LOT Dissertations Series*. 2023.

Papers

1. [Nominal Class Assignment in Swahili: A Computational Account](#)
Giada Palmieri, Konstantinos Kogkalidis
In *Proceedings of the 10th Italian Conference on Computational Linguistics (CLiC-it 2024)*
2. [On Tables with Numbers, with Numbers](#)
Konstantinos Kogkalidis, Stergios Chatzikyriakidis
In *Preprint*. 2024
3. [Learning Structure-Aware Representations of Dependent Types](#)
Konstantinos Kogkalidis, Orestis Melkonian, Jean-Philippe Bernardy
In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS 2025)*
4. [Algebraic Positional Encodings](#)
Konstantinos Kogkalidis, Jean-Philippe Bernardy, Vikas Garg
In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS 2025)*
5. [OYXOY: A Modern NLP Test Suite for Modern Greek](#)
Konstantinos Kogkalidis, Stergios Chatzikyriakidis, Eirini Chrysovalantou Giannikouri, Vasiliki Katsouli, Christina Klironomou, Christina Koula, Dimitris Papadakis, Thelka Pasparki, Erofilis Psaltaki, Efthymia Sakellariou, Hara Soupiona
In *Findings of the Association for Computational Linguistics (EACL 2024)*
6. [SPINDLE: Spinning Raw Text into Lambda Terms with Graph Attention](#)
Kogkalidis, Michael Moortgat, Richard Moot
In *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics: System Demonstrations (EACL 2023)*

7. **Geometry-Aware Supertagging with Heterogeneous Dynamic Convolutions**
Konstantinos Kogkalidis and Michael Moortgat
In *Proceedings of the 2023 CLASP Conference on Learning with Small Data (LSD 2023)*
8. **Improving BERT Pretraining with Syntactic Supervision**
Georgios Tziafas, Konstantinos Kogkalidis, Gijs Wijnholds and Michael Moortgat
In *Proceedings of the 2023 CLASP Conference on Learning with Small Data (LSD 2023)*
9. **Discontinuous Constituency and BERT: A Case Study of Dutch**
Konstantinos Kogkalidis and Gijs Wijnholds
In *Findings of the Association for Computational Linguistics (ACL 2022)*
10. **Diamonds are Forever: Theoretical and Empirical Support for a Dependency-Enhanced Type Logic**
Michael Moortgat, Konstantinos Kogkalidis and Gijs Wijnholds
In *Logic and Algorithms in Computational Linguistics 2021 (LACompLing2021)*
11. **A Logic-Based Framework for Natural Language Inference in Dutch**
Lasha Abzianizde and Konstantinos Kogkalidis
In *Journal of Computational Linguistics in the Netherlands (CLIN 2021)*
12. **Fighting the COVID-19 Infodemic with a Holistic BERT Ensemble**
Georgios Tziafas, Konstantinos Kogkalidis and Tommaso Caselli
In *Proceedings of the 4th Workshop on NLP for Internet Freedom (NLP4IF 2021)*
13. **Neural Proof Nets**
Konstantinos Kogkalidis, Michael Moortgat and Richard Moot
In *Proceedings of the 24th Conference on Computational Natural Language Learning (CoNLL 2022)*
14. **Æthel: Automatically Extracted Typological Derivations for Dutch**
Konstantinos Kogkalidis, Michael Moortgat and Richard Moot
In *Proceedings of the 12th Language Resources and Evaluation Conference (LREC 2020)*
15. **Deductive Parsing with an Unbounded Type Lexicon**
Konstantinos Kogkalidis, Michael Moortgat, Richard Moot and Georgios Tziafas
In *Preprint. 2019*
16. **Constructive Type-Logical Supertagging with Self-Attention Networks**
Konstantinos Kogkalidis, Michael Moortgat and Tejaswini Deoskar
In *Proceedings of the 4th Workshop on Representation Learning for NLP (REPL4NLP 2019)*
17. **Towards a 2-Multiple Context-Free Language for the 3-Dimensional Dyck Language**
Konstantinos Kogkalidis and Orestis Melkonian
In *At the Intersection of Language, Logic and Information (ESSLI 2018)*

Presentations (selection)

1. [Invited] **Grammaticality as Provability: a Curry-Howard Interpretation of Function Argument Structures and Dependency Relations**
At *The Logic Seminar of the University of Groningen*, Groningen, 2025.
2. [Invited] **LLM-free Representation Learning from Theorem Structure**
At *Deep Learning Models for Mathematics and Type Theory*, Gothenburgh, 2025.
3. [Contributed] **Structure-Aware Neural Representations of Agda Programs**
At *EuroProofNet-WG5: Theorem Proving and Machine Learning in the Age of LLMs*, Edinburg, 2025.
4. [Contributed (Poster, Spotlight)] **Algebraic Positional Encodings**
At *Neural Information Processing Systems*, Vancouver, 2024.

5. [Contributed (Poster)] **Learning Structure-Aware Representations of Dependent Types**
At *Neural Information Processing Systems*, Vancouver, 2024.
6. [Invited] **Tables with Numbers, and What They (Do Not) Mean**
At *Computational Linguistics and Language Technology Lab (CLLT) at the University of Crete*, Crete, 2024.
7. [Invited] **Empiricism in Computational Linguistics**
At *Circolo Linguistico dell'Università di Bologna*, Bologna, 2024.
8. [Contributed (Poster)] **Spinning Raw Text into Lambda Terms with Graph Attention**
At *The 17th Conference of the European Chapter of the Association for Computational Linguistics*, Dubrovnik, 2023.
9. [Contributed] **Neurosymbolic Proof Search for Linguistics**
At *Logic for the AI Spring, Lake Como School of Advanced Studies*, Como, 2023.
10. [Invited] **The Unicorn of Constant-Time Parsing**
At *End-to-End Compositional Models of Vector-Based Semantics, ESSLLI*, Galway, 2022.
11. [Lecture] **Logic-Based Parsing with Neural Networks**
At *End-to-End Compositional Models of Vector-based Semantics, ESSLLI*, Galway, 2022.
12. [Contributed] **Supertagging Beyond Trees with Heterogeneous Dynamic Convolutions**
At *Computational Linguistics in the Netherlands, CLIN32*, Tilburg, 2022.
13. [Contributed] **Logic-Based Reasoning for Natural Language Inference in Dutch**
At *Computational Linguistics in the Netherlands, CLIN31*, Utrecht, 2021.
14. [Internal (Demo)] **From Text to Meaning: a Type-Driven Treebank and Applications**
At *Language Sciences Day*, Utrecht, 2021.
15. [Contributed] **Neural Proof Nets**
At *The 24th Conference on Computational Natural Language Learning*, virtual, 2020.
16. [Contributed] **Typed Supertags and Semantic Parses for Dutch**
At *Computational Linguistics in the Netherlands, CLIN30*, Utrecht, 2020.
17. [Contributed] **Deductive Parsing with an Unbounded Type Lexicon**
At *SemSpace 4, ESSLLI*, Riga, 2019.
18. [Contributed (Poster)] **Constructive Type-Logical Supertagging with Self-Attention Networks**
At *The 4th Workshop on Representation Learning for NLP*, Florence, 2019.
19. [Contributed] **From Raw Text to Linear Lambda Terms**
At *Compositionality in Formal and Distributional Models of Natural Language Semantics*, Utrecht, 2019.
20. [Contributed] **Towards a 2-MCFG for the 3-Dimensional Dyck Language**
At *ESSLLI Student Session, ESSLLI*, Sofia, 2018.

Professional Service

Area Chair

ACL ARR (2025 - 2026)

Reviewer

NeurIPS (2024 - 2025), ACL ARR (2021 - 2025)

Extracurricular

Languages

Greek (native), English (fluent), Italian (intermediate), German (B1), Dutch (elementary)