

# Konstantinos Kogkalidis

## CURRICULUM VITAE

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

Updated March 22, 2025.

### Personal Information

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Date of Birth 19 July 1991  
Nationality Greek  
Current residence Bologna, Italy  
Pronouns he/him  
Email [konstantinos@riseup.net](mailto:konstantinos@riseup.net)  
Website [konstantinoskokos.github.io](https://konstantinoskokos.github.io)

### Academia

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**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](#)  
Promotors 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

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

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

### Teaching

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**2022 - 2023** Compositional Models of Vector-Based Semantics (ESSLLI 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

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

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### 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 and Konstantinos Kogkalidis  
In *Proceedings of the 10th Italian Conference on Computational Linguistics (CLiC-it 2024)*
2. [On Tables with Numbers, with Numbers](#)  
Konstantinos Kogkalidis and Stergios Chatzikyriakidis  
In *Proceedings of the NAACL 2025 Workshop on Language Models for Underserved Communities (LM4UC)*
3. [Learning Structure-Aware Representations of Dependent Types](#)  
Konstantinos Kogkalidis, Orestis Melkonian and Jean-Philippe Bernardy  
In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS 2024)*
4. [Algebraic Positional Encodings](#)  
Konstantinos Kogkalidis, Jean-Philippe Bernardy and Vikas Garg  
In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS 2024)*
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 and 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 and 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 (ESSLLI 2018)*

## **Presentations** (selection)

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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. [Contributed] **On Tables with Numbers, with Numbers**  
At *The NAACL 2025 Workshop on Language Models for Underserved Communities*, Albuquerque, New Mexico, 2025.

3. [Invited] **LLM-free Representation Learning from Theorem Structure**  
At *Deep Learning Models for Mathematics and Type Theory*, Gothenburgh, 2025.
4. [Contributed] **Structure-Aware Neural Representations of Agda Programs**  
At *EuroProofNet-WG5: Theorem Proving and Machine Learning in the Age of LLMs*, Edinburg, 2025.
5. [Contributed (Poster, Spotlight)] **Algebraic Positional Encodings**  
At *Neural Information Processing Systems*, Vancouver, 2024.
6. [Contributed (Poster)] **Learning Structure-Aware Representations of Dependent Types**  
At *Neural Information Processing Systems*, Vancouver, 2024.
7. [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.
8. [Invited] **Empiricism in Computational Linguistics**  
At *Circolo Linguistico dell'Università di Bologna*, Bologna, 2024.
9. [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.
10. [Contributed] **Neurosymbolic Proof Search for Linguistics**  
At *Logic for the AI Spring, Lake Como School of Advanced Studies*, Como, 2023.
11. [Invited] **The Unicorn of Constant-Time Parsing**  
At *End-to-End Compositional Models of Vector-Based Semantics*, ESSLLI, Galway, 2022.
12. [Lecture] **Logic-Based Parsing with Neural Networks**  
At *End-to-End Compositional Models of Vector-based Semantics*, ESSLLI, Galway, 2022.
13. [Contributed] **Supertagging Beyond Trees with Heterogeneous Dynamic Convolutions**  
At *Computational Linguistics in the Netherlands*, CLIN32, Tilburg, 2022.
14. [Contributed] **Logic-Based Reasoning for Natural Language Inference in Dutch**  
At *Computational Linguistics in the Netherlands*, CLIN31, Utrecht, 2021.
15. [Internal (Demo)] **From Text to Meaning: a Type-Driven Treebank and Applications**  
At *Language Sciences Day*, Utrecht, 2021.
16. [Contributed] **Neural Proof Nets**  
At *The 24th Conference on Computational Natural Language Learning*, virtual, 2020.
17. [Contributed] **Typed Supertags and Semantic Parses for Dutch**  
At *Computational Linguistics in the Netherlands*, CLIN30, Utrecht, 2020.
18. [Contributed] **Deductive Parsing with an Unbounded Type Lexicon**  
At *SemSpace 4*, ESSLLI, Riga, 2019.
19. [Contributed (Poster)] **Constructive Type-Logical Supertagging with Self-Attention Networks**  
At *The 4th Workshop on Representation Learning for NLP*, Florence, 2019.
20. [Contributed] **From Raw Text to Linear Lambda Terms**  
At *Compositionality in Formal and Distributional Models of Natural Language Semantics*, Utrecht, 2019.
21. [Contributed] **Towards a 2-MCFG for the 3-Dimensional Dyck Language**  
At *ESSLLI Student Session*, ESSLLI, Sofia, 2018.

## Professional Service

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### Area Chair

ACL ARR (2025 - 2026)

### Reviewer

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

## **Extracurricular**

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### **Languages**

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