Konstantinos Kogkalidis
CURRICULUM VITAE

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

Updated March 11, 2025

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*
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

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 (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

	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 Pasparaki, Erofili 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 Typelogical 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)

1. [Invited] **Grammaticality as Provability: a Curry-Howard Interpretation of Function Argument Structures and Dependency Relations**
   The Logic Seminar of the University of Groningen, Groningen, 2025.

2. [Invited] **LLM-free Representation Learning from Theorem Structure**
   Deep Learning Models for Mathematics and Type Theory, Gothenburgh, 2025.

3. [Contributed] **Structure-Aware Neural Representations of Agda Programs**
   EuroProofNet-WG5: Theorem Proving and Machine Learning in the Age of LLMs, Edinburg, 2025.

4. [Contributed (Poster, Spotlight)] **Algebraic Positional Encodings**
   Neural Information Processing Systems, Vancouver, 2024.

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

Professional Service

Area Chair
ACL ARR (2025 - 2026)

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

Extracurricural

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