Konstantinos Kogkalidis
CURRICULUM VITAE

| **Structure-Aware Machine Learning** | **(AI for) Type & Proof Theory** |
| **Neurosymbolic Integration** | **Computational Linguistics** |

Updated September 27, 2025.

Personalia

Date of Birth	19 July 1991
Nationality	Greek
Current Residence	Thessaloniki, Greece
Pronouns	he/him
Email	konstantinos at riseup dot net
Webpage	konstantinoskokos.github.io

Academia

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

07/2023 - 07/2025 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
Award 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

09/2025 - Senior AI Specialist at Input Output (IOHK)
AI Strategy & Innovation.

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

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)

09/2024	**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 Dissertation Series.* 2023.

Papers

1. **Nominal Class Assignment in Swahili: A Computational Account**
   Giada Palmieri and <u>Konstantinos Kogkalidis</u>
   In *Proceedings of the 10th Italian Conference on Computational Linguistics* (*CLiC-it 2024*).
2. **On Tables with Numbers, with Numbers**
   <u>Konstantinos Kogkalidis</u> and Stergios Chatzikyriakidis
   In *Proceedings of the 1st Workshop on Language Models for Underserved Communities* (*LM4UC 2025*).
3. **Learning Structure-Aware Representations of Dependent Types**
   <u>Konstantinos Kogkalidis</u>, Orestis Melkonian and Jean-Philippe Bernardy
   In *Proceedings of the 38th Conference on Neural Information Processing Systems* (*NeurIPS 2024*).
4. **Algebraic Positional Encodings**
   <u>Konstantinos Kogkalidis</u>, 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**
   <u>Konstantinos Kogkalidis</u>, Stergios Chatzikyriakidis, Eirini Chrysovalantou Giannikouri, Vassiliki Katsouli, Christina Klironomou, Christina Koula, Dimitris Papadakis, Thelka Pasparaki, Erofili 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**
   <u>Konstantinos Kogkalidis</u>, 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 Demos*).
7. **Geometry-Aware Supertagging with Heterogeneous Dynamic Convolutions**
   <u>Konstantinos Kogkalidis</u> 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, <u>Konstantinos Kogkalidis</u>, 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**
   <u>Konstantinos Kogkalidis</u> and Gijs Wijnholds
   In *Findings of the Association for Computational Linguistics* (*ACL 2023 Findings*).
10. **Diamonds are Forever: Theoretical and Empirical Support for a Dependency-Enhanced Type Logic**
    Michael Moortgat, <u>Konstantinos Kogkalidis</u> and Gijs Wijnholds
    In *Logic and Algorithms in Computational Linguistics 2021* (*LACompLing2021*).
11. **A Logic-Based Framework for Natural Language Inference in Dutch**
    Lasha Abzianidze and <u>Konstantinos Kogkalidis</u>
    In *Journal of Computational Linguistics in the Netherlands* (*CLIN 2021*).
12. **Fighting the COVID-19 Infodemic with a Holistic BERT Ensemble**
    Georgios Tziafas, <u>Konstantinos Kogkalidis</u> and Tommaso Caselli
    In *Proceedings of the 4th Workshop on NLP for Internet Freedom* (*NLP4IF 2021*).
13. **Neural Proof Nets**
    <u>Konstantinos Kogkalidis</u>, Michael Moortgat and Richard Moot
    In *Proceedings of the 24th Conference on Computational Natural Language Learning* (*CoNLL 2020*).
14. **Æthel: Automatically Extracted Typelogical Derivations for Dutch**
    <u>Konstantinos Kogkalidis</u>, 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**
    <u>Konstantinos Kogkalidis</u>, Michael Moortgat, Richard Moot and Georgios Tziafas
    In *Preprint.* (*2019*).
16. **Constructive Type-Logical Supertagging with Self-Attention Networks**
    <u>Konstantinos Kogkalidis</u>, 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 Grammar for the 3-Dimensional Dyck Language**
    <u>Konstantinos Kogkalidis</u> and Orestis Melkonian
    In *At the Intersection of Language, Logic and Information* (*ESSLLI 2018 Student Session*).

Presentations (selection)

1. [Invited] **Grammaticality as Provability**
   At *The Logic Seminar of the University of Groningen*, Groningen, 2025.
2. [Contributed] **On Tables with Numberrs, with numbers**
   At *The NAACL 2025 Workshop on Language Models for Underserved Communities*, Online, 2025.
3. [Invited] **LLM-free Representation Learning from Theorem Structure**
   At *Deep Learning Models for Mathematics and Type Theory*, Gothenburg, 2025.
4. [Contributed] **Structure-Aware Neural Representations of Agda Programs**
   At *EuroProofNet-WG5: Theorem Proving and Machine Learning in the Age of LLMs*, Edinburgh, 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*, Online, 2024.
8. [Invited] **Empiricism in Computational Linguistics**
   At *Circolo Linguistico dell'Universita di Bologna*, Bologna, 2024.
9. [Contributed (Poster)] **Nominal Class Assignment in Swahili: A Computational Account**
   At *Computational Linguistics in Italy*, Pisa, 2024.
10. [Contributed] **Geometry-Aware Supertagging with Heterogeneous Dynamic Convolutions**
   At *The 2023 CLASP Conference on Learning with Small Data*, Gothenburg, 2023.
11. [Contributed (Poster)] **Improving BERT Pretraining with Syntactic Supervision**
   At *The 2023 CLASP Conference on Learning with Small Data*, Gothenburg, 2023.
12. [Contributed] **Neurosymbolic Proof Search for Linguistics**
   At *Logic for the AI Spring, Lake Como School of Advanced Studies*, Como, 2023.
13. [Invited] **The Unicorn of Constant-Time Parsing**
   At *End-to-End Compositional Models of Vector-Based Semantics, ESSLLI*, Galway, 2022.
14. [Lecture] **Logic-Based Parsing with Graph Neural Networks**
   At *End-to-End Compositional Models of Vector-Based Semantics, ESSLLI*, Galway, 2022.
15. [Contributed] **Supertagging Beyond Trees with Heterogeneous Dynamic Convolutions**
   At *Computational Linguistics in the Netherlands*, Tilburg, 2022.
16. [Internal (Demo)] **From Text to Meaning: A Type-Driven Treebank, and Applications**
   At *Language Sciences Day*, Utrecht, 2021.
17. [Contributed] **Neural Proof Nets**
   At *The 24th Conference on Computational Natural Language Learning*, Online, 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*, Sofia, 2018.

Professional Service

ACL ARR
Reviewer (2021 -); Area Chair (2025 -)

NeurIPS
Reviewer (2025 -)

Extracurricular

Languages
Greek [native], English [working proficiency], Italian [intermediate], German [B1], Dutch [basic]