

Konstantinos Kogkalidis
CURRICULUM VITAE

Updated November 25, 2024

Structured & Discrete Machine Learning | Neurosymbolic Integration
Syntax-Semantics Interface | Computational Syntax | Type & Proof Theory

Personal Information

Date of Birth 19 July 1991
Nationality Greek
Current Residence Bologna, Italy
Pronouns he/him

Contact & Links

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🐙 github.com/konstantinoskokos
🌐 konstantinoskokos.github.io

Academia

07/2023 - **Postdoctoral Researcher**
Institution Artificial Intelligence & Machine Learning Group, Aalto University
Research Topic *Neurosymbolic Reasoning & Reinforcement Learning*

09/2018 - 12/2022 **PhD Candidate in Computational Linguistics**
Institution Utrecht Institute of Language Sciences, 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* (2024)

09/2017 - 07/2019 **MSc in Artificial Intelligence, cum laude** (120 EC)
Institution Graduate School of Natural Sciences, Utrecht University
Specializations Logic & Reasoning (main track), Applied Data Science (profile)
Thesis *Extracting & Learning a Dependency-Enhanced Lexicon for Dutch*
Supervisor Michael Moortgat

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

Industry

02/2024 - **ML Research Scientist @ skyfora**
AI-Based Weather Forecasting

07/2017 - 09/2018 **ML Engineer @ geekbot**
Representation Learning for Short & Unstructured Texts at Scale

2011 - 2012 **Game Dev (independent & freelance)**
Placed 4th in enno.vation.gr with an adventure-horror demo, ia.

Teaching

2022 - 2023	Compositional Models of Vector-Based Semantics (ESSLLI 2022, guest lecture)
2021 - 2022	Logic & Language (UU AI MSc, 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

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
Host Institution	Chalmers
Host	Jean-Philippe Bernardy

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

PhD Thesis

- [Dependency as Modality, Parsing as Permutation](#)
In *LOT Dissertations Series*. 2023.
E. W. Beth Dissertation Prize 2024 (best dissertation)

Publications & Preprints

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
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 2024)*.
4. [Algebraic Positional Encodings](#)
Konstantinos Kogkalidis, Jean-Philippe Bernardy, 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 Pasparaki, 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
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 (REPLANLP 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) Empiricism in Computational Linguistics
Circolo Linguistico dell'Università di Bologna, Bologna, 2024.
2. (Poster) SPINDLE: Spinning Raw Text into Lambda Terms with Graph Attention
The 17th Conference of the European Chapter of the Association for Computational Linguistics, Dubrovnik, 2023.
3. (Contributed) Neurosymbolic Proof Search for Linguistics
Logic for the AI Spring, Lake Como School of Advanced Studies, Como, 2023.

4. (Invited) The Unicorn of Constant-Time Parsing
End-to-End Compositional Models of Vector-Based Semantics, ESSLLI, Galway, 2022.
5. (Lecture) Logic-Based Parsing with Neural Networks
End-to-End Compositional Models of Vector-based Semantics, ESSLLI, Galway, 2022.
6. (Contributed) Supertagging Beyond Trees with Heterogeneous Dynamic Convolutions
Computational Linguistics in the Netherlands, CLIN32, Tilburg, 2022.
7. (Contributed) Logic-Based Reasoning for Natural Language Inference in Dutch
Computational Linguistics in the Netherlands, CLIN31, Utrecht, 2021.
8. (Demo) From Text to Meaning: a Type-Driven Treebank and Applications
Language Sciences Day, Utrecht, 2021.
9. (Contributed) Neural Proof Nets
The 24th Conference on Computational Natural Language Learning, virtual, 2020.
10. (Contributed) Typed Supertags and Semantic Parses for Dutch
Computational Linguistics in the Netherlands, CLIN30, Utrecht, 2020.
11. (Contributed) Deductive Parsing with an Unbounded Type Lexicon
SemSpace 4, ESSLLI, Riga, 2019.
12. (Poster) Constructive Type-Logical Supertagging with Self-Attention Networks
The 4th Workshop on Representation Learning for NLP – Florence, 2019.
13. (Contributed) From Raw Text to Linear λ Terms
Compositionality in Formal and Distributional Models of Natural Language Semantics, Utrecht, 2019.
14. (Contributed) Towards a 2-MCFG for the 3-Dimensional Dyck Language
ESSLLI Student Session, ESSLLI, Sofia, 2018.

Volunteering

2016 - 2017

Support of Relief Efforts in Refugee Camps

- Weekly Humanitarian aid in the Diavata refugee camp (with [metadrasi](#))
- Installation of mid-range wifi antennae around central Macedonia (with [impact nomads](#))

Extracurricular

Languages

- Greek (native) • English (C2) • Italian (intermediate) • German (B1) • Dutch (elementary)