

Konstantinos Kogkalidis

CURRICULUM VITAE

Personal Information

Date of Birth 19 July 1991
Nationality Greek
Current Residence Helsinki, Finland
Pronouns he/him

Contact & Links

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Interests

Structured & Discrete Machine Learning, Type & Proof Theory, Neurosymbolic Integration

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**
Institution Utrecht Institute of Language Sciences, Utrecht University
Research Topic *Typological grammar induction for vector-based semantics from Dutch treebank corpora*
Thesis *Dependency as Modality, Parsing as Permutation* [[pre-review](#)]
Promoters Michael Moortgat & Richard Moot

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 **Integrated Diploma in Electrical & Computer Engineering** (300 EC, MSc equivalent)
Institution Department of Engineering, Aristotle University of Thessaloniki
Specializations Electronics & Computers
Thesis *Matlab Simulation and a Model-Based Reflex Agent for the PacMan Game*
Supervisor Athanasios Kehagias

Industry

07/2017 - 09/2018 **Machine Learning Engineer @ [geekbot](#)**

- Unsupervised word vectors & topic modeling for short unstructured texts at scale
- Minimally supervised multi-aspect sentiment extraction

2011 - 2012 **Freelance Level Designer**

- Awarded 4th place award by [ennovation.gr](#) for a prototype experimental horror-adventure game.

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)

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

Publications & Preprints

[Dependency as Modality, Parsing as Permutation \(PhD Thesis\)](#)

Konstantinos Kogkalidis
In *LOT Dissertations*. 2023.

[SPINDLE: Spinning Raw Text into Lambda Terms with Graph Attention](#)

Konstantinos Kogkalidis, Michael Moortgat and Richard Moot
In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics: System Demonstrations*. 2023.

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*. 2022 (to appear)

[Geometry-Aware Supertagging with Heterogeneous Dynamic Convolutions](#)

Konstantinos Kogkalidis and Michael Moortgat
Under review. Preprint available on arXiv. 2022.

[Discontinuous Constituency and BERT: A Case Study of Dutch](#)

Konstantinos Kogkalidis and Gijs Wijnholds
In *Findings of the Association for Computational Linguistics*. 2022.

[A Logic-Based Framework for Natural Language Inference in Dutch](#)

Lasha Abzianizde and Konstantinos Kogkalidis
In *Journal of Computational Linguistics in the Netherlands*. 2021.

[Fighting the COVID-19 Infodemic with a Holistic BERT Ensemble](#)

Georgios Tzifas, Konstantinos Kogkalidis and Tommaso Caselli
In *Proceedings of the 4th Workshop on NLP for Internet Freedom*. 2021.

[Neural Proof Nets](#)

Konstantinos Kogkalidis, Michael Moortgat and Richard Moot
In *Proceedings of the 24th Conference on Computational Natural Language Learning*. 2020.

[Æthel: Automatically Extracted Typological Derivations for Dutch](#)

Konstantinos Kogkalidis, Michael Moortgat and Richard Moot
In *Proceedings of the 12th Language Resources and Evaluation Conference*. 2020.

[Deductive Parsing with an Unbounded Type Lexicon](#)

Konstantinos Kogkalidis, Michael Moortgat, Richard Moot and Georgios Tzifas
Preprint. 2019

[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*. 2019.

[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*. 2019.

Presentations

SPINDLE: Spinning Raw Text into Lambda Terms with Graph Attention [poster]

The 17th Conference of the European Chapter of the Association for Computational Linguistics

Neurosymbolic Proof Search for Linguistics

Logic for the AI Spring, Lame Como School of Advanced Studies, Como.

The Unicorn of Constant-Time Parsing

End-to-End Compositional Models of Vector-Based Semantics, ESSLLI 2022, Galway.

Dynamic Proof Nets [demo]

End-to-End Compositional Models of Vector-Based Semantics, ESSLLI 2022, Galway.

Logic-Based Parsing with Neural Networks

Compositional Models of Vector-based Semantics, ESSLLI 2022, Galway.

Supertagging Beyond Trees with Heterogeneous Dynamic Convolutions

Computational Linguistics in the Netherlands, CLIN32, 2022, Tilburg.

Logic-Based Reasoning for Natural Language Inference in Dutch

Computational Linguistics in the Netherlands, CLIN31, 2021, Utrecht.

From Text to Meaning: a Type-Driven Treebank and Applications [demo]

Language Sciences Day, 2021, Utrecht.

Neural Proof Nets

Conference on Computational Natural Language Learning, 2020, virtual.

Typed Supertags and Semantic Parses for Dutch

Computational Linguistics in the Netherlands, CLIN30, 2020, Utrecht.

Deductive Parsing with an Unbounded Type Lexicon

SemSpace 4, ESSLLI 2019, Riga.

Constructive Type-Logical Supertagging with Self-Attention Networks [poster]

The 4th Workshop on Representation Learning for NLP, 2019, Florence.

From Raw Text to Linear λ Terms

Compositionality in Formal and Distributional Models of Natural Language Semantics, 2019, Utrecht.

Towards a 2-Multiple Context-Free Grammar for the 3-Dimensional Dyck Language

ESSLLI Student Session, ESSLLI 2018, Sofia.

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 [working proficiency], Italian [intermediate], German [B1, rusty], Dutch [basic]

Art & Crafts, Other

slow and heavy music, musical instruments (bass, guitar and didgeridoo), video games,
DIY & maker culture, bird watching, political theory & history