Konstantinos Kogkalidis
Curriculum Vitae

Updated July 10, 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	Helsinki, Finland
Pronouns	he/him

Contact & Links

- ✉ *λxy.x@y.net konstantinos riseup*
- ◯ 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* [published version]
Awards	E. W. Beth Dissertation Prize, The Association for Logic, Language and Information (FoLLI)
Promotors	Michael Moortgat & Richard Moot
Committee	A. v.d. Bosch, M. Sadrzadeh, J. Bos, S. Clark, S. Chatzikyriakidis
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
Thesis	*Matlab Simulation and a Model-Based Reflex Agent for the PacMan Game*
Supervisor	Athanasios Kehagias

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 ennovation.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

Publications & Preprints

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

Learning Structure-Aware Representations of Dependent Types
Konstantinos Kogkalidis, Orestis Melkonian, Jean-Philippe Bernardy
Preprint. 2024

Algebraic Positional Encodings
Konstantinos Kogkalidis, Jean-Philippe Bernardy, Vikas Garg
Preprint. 2023

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 and Hara Soupiona
In *Findings of the Association for Computational Linguistics: EACL 2024.* 2023.

Dependency as Modality, Parsing as Permutation (**PhD Thesis**)
Konstantinos Kogkalidis
In *LOT Dissertations.* 2023.

SPINDLE: Spinning Raw Text into Lambda Terms with Graph Attention
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
Michael Moortgat, Konstantinos Kogkalidis and Gijs Wijnholds
In *Logic and Algorithms in Computational Linguistics 2021.* 2022

Geometry-Aware Supertagging with Heterogeneous Dynamic Convolutions
Konstantinos Kogkalidis and Michael Moortgat

In *Proceedings of the 2023 CLASP Conference on Learning with Small Data*. 2022.

Discontinuous Constituency and BERT: A Case Study of Dutch
Konstantinos Kogkalidis and Gijs Wijnholds
In *Findings of the Association for Computational Linguistics: ACL 2022*. 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.

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*. 2021.

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*. 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 Typelogical 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 Tziafas
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)

Extracurricural

Languages

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

Arts & Crafts, Other

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