YU CAO

up to Janurary 2019

Rutgers Department of Linguistics
18 Seminary Place
New Brunswick, New Jersey 08901-1184

https://pterosdiacos.github.io/
yc825@linguistics.rutgers.edu

Professional Summary

Linguistics PhD student in linguistics with a specialization in computational semantics, syntax-semantics interface, and discourse analysis. Strong critical-thinking and problem-solving skills.

Computation Computational mindset and experiences in algorithm design and data structures gained through engaging in Olympiad in Informatics since high school. The First Prize in the 13th National Olympiad in Informatics in Provinces, China.

NLP/NLU Highly interested in how learning models and formal theories inform each other. Relevant coursework: Natural Language Understanding and Computational Semantics (LING-GA 1012), Team Project Seminar: Linguistic Knowledge in Reusable Sentence Encoders (LING-GA 3340) at New York University. Graph formalisms for meaning representations at NASSLLI 2018, Carnegie Mellon University. Statistical Natural Language Processing at Coursera.

Skills

Programming in Python, C, Pascal
Working knowledge of NLP models and machine learning tools

Linguistic Analysis

Languages

Fluent Mandarin (native), English (fluent), Japanese (working fluency; certified Level N1, Japanese Language Proficiency Test 2013), Cantonese (limited fluency).

Basic French (beginner), Hong Kong Sign Language (beginner).

Projects

Ongoing Linguistic Knowledge in Reusable Sentence Encoders. Team project supervised by Sam Bowman at NYU. Research question undertaken: Whether different pretraining tasks make qualitative difference in the kinds of linguistic knowledge models learn.

Ongoing Graph Representation of Meaning. Revised Abstract Meaning Representation to model scope, intensionality and other phenomena in formal semantics study. Developed a model-theoretical interpreter for graphs and a construction mechanism based on CCG and hyperedge replacement algebra.

06/2018 Automated Fact-Value Distinction in Court Opinions. Open access at SSRN. In collaboration with Daniel L. Chen at the New York University Center for Data Science and Data Science Justice Collaboratory.

- Using dependency features to distinguish fact vs. value statements.
- Shown in application that value segments of court opinions are more informative than fact segments of the ideological direction of the U.S. Circuit Court.

12/2017 Incremental topological sorting (https://github.com/PterosDiacos/Incremental-Topo-Sort).

- Modified Kahn's algorithm to deal with topological sorting over "disjunctive edges" (such an edge (U, v) instructs that at least one node in the set U precedes the node v) in phonological learning.
- Conducted an experimental study to compare different incremental updating strategies under the uncertainty of disjunction.

Work

09/2018–present Teaching Assistant/Course Instructor at Rutgers University. Course taught: Introduction to Linguistic Theory (LING 201).

12/2014–07/2015 Research Assistant at the Center for Sign Linguistics and Deaf Studies, The Chinese University of Hong Kong.
Provided linguistic expertise and assisted in developing a tablet-based Chinese grammatical knowledge assessment tool for deaf/hard of hearing children.

Education

2016–present Rutgers, The State University of New Jersey,
Doctor of Philosophy in Linguistics.

2013–2014 The Chinese University of Hong Kong,
Master of Arts in Chinese Linguistics and Language Acquisition,
On Dean's List 2013–2014,
Won the Best M.A. Thesis Award 2014 with *The syntax and semantics of gapping-like ellipsis in Chinese.*

2009–2013 Sichuan Normal University, China,
Bachelor of Arts in Teaching Chinese as a Foreign Language,
Won the Distinguished Thesis Award 2013 with *The semantics of the mix-object construction*.

Other Academic Experience

06/2018 North American Summer School on Logic, Language, and Information.

07/2015 LSA Linguistic Summer Institute, University of Chicago.