NATHANIEL WEIR

Department of Computer Science
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EDUCATION

2019–Present **Johns Hopkins University**
Ph.D., Computer Science – Natural Language Processing
Advisor: Benjamin Van Durme

2015–2019 **Brown University**
Sc.B., Applied Mathematics & Computer Science, *magna cum laude* with Honors
Thesis: *Bootstrapping Generalization in Neural Text-to-SQL Semantic Parsing Models*
Advisors: Ugur Cetintemel, Carsten Binnig, and Ellie Pavlick

ACADEMIC INTERESTS

NLU, structured textual reasoning, controlled generation, computational semantics, machine common sense

PUBLICATIONS

2021 Jiefu Ou*, **Nathaniel Weir***, Anton Belyy*, Felix Yu, and Benjamin Van Durme. Infillmore: Neural Frame Lexicalization for Narrative Text Infilling. *preprint.* https://arxiv.org/abs/2103.04941

2020 **Nathaniel Weir**, João Sedoc, and Benjamin Van Durme. COD3S: Diverse Generation with Discrete Semantic Signatures. *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing.* **Oral Presentation.** https://www.aclweb.org/anthology/2020.emnlp-main.421/

2020 **Nathaniel Weir**, Adam Poliak, and Benjamin Van Durme. Probing Neural Language Models for Human Tacit Assumptions. *Proceedings of the 42nd Annual Conference of the Cognitive Science Society.* **Oral Presentation.** https://arxiv.org/abs/2004.04877

2020 **Nathaniel Weir**, Prasetya Utama, Alex Galakatos, Andrew Crotty, Amir Ilkhechi, Shekar Ramaswamy, Rohin Bhusan, Nadja Geisler, Benjamin Hattasch, Steffen Eger, Ugur Cetintemel, and Carsten Binnig. DBPal: A Fully Pluggable NL2SQL Training Pipeline. In *Proceedings of SIGMOD Conference 2020.* **Oral Presentation.** https://dl.acm.org/doi/abs/10.1145/3318464.3380589

2018 Fuat Basik, Benjamin Hattasch, Amir Ilkhechi, Arif Usta, Shekar Ramaswamy, Prasetya Utama, **Nathaniel Weir**, Carsten Binnig and Ugur Cetintemel. DBPal: A Learned NL-Interface for Databases. In *Proceedings of SIGMOD Conference 2018.* **Demo Presentation.** https://dl.acm.org/citation.cfm?id=3193562

2017 Prasetya Utama, **Nathaniel Weir**, Carsten Binnig, and Ugur Cetintemel. Voice-based Data Exploration: Chatting with your Database. In *Proceedings of 2017 workshop on Search-Oriented Conversational AI.* https://scai.info/papers/SCAI2017_EchoQuery.pdf

PRESENTATIONS

Probing Neural Language Models for Human Tacit Assumptions

03/2020	Poster	8th Mid-Atlantic Student Colloquium on Speech, Language and Learning

DBPal: A Fully Pluggable Natural Language Interface to Databases

01/2019	Talk	North East Database Day @ MIT
10/2018	Talk	IBM AI Systems Day @ MIT
01/2018	Demo	North East Database Day @ MIT

AWARDS

2021 - 2024	**NSF Graduate Research Fellowship**
2019	**SIGMOD Undergraduate Research Competition, 2nd place**
2019	**Brown Computer Science Senior Award**
2019	**CRA Outstanding Undergraduate Researcher Award, Honorable Mention**
2019	**Sigma Xi Electee**
2019	**Brown CS Undergraduate Research Symposium, 3rd Place**
2018	**Randy F. Pausch CS Undergraduate Summer Research Award, $10,000**
2018	**NSF Travel Grant, $1,000**
2017	**Karen T. Romer Undergraduate Teaching and Research Award, $3,500**

RESEARCH EXPERIENCE

Fall 2019 – Present

Center for Language and Speech Processing at Johns Hopkins University
PhD Researcher
Projects include semantically-guided diverse sequence generation, probing neural contextual encoders for linguistically-grounded semantic phenomena, and commonsense inference of event sequences.

Spring 2017 – May 2019

Database Group at Brown University
Undergraduate Researcher
Projects centered around domain adaptation for neural semantic parsing of natural language queries into SQL.

Summer 2016

The MITRE Corporation
Summer Co-op
Explored recent technological products for use in professional collaborative work spaces. Designed system for calling out-of-office employees into meetings.

TEACHING EXPERIENCE

Fall 2018

Brown University
Teaching Assistant
CSCI1570 Design and Analysis of Algorithms
Instructor: Paul Valiant
Held hours and graded assignments.

Spring 2017
Spring 2018

Brown University
Teaching Assistant
CSCI0220 Discrete Structures and Probability
Instructor: Caroline Klivans
Held hours and recitations, wrote and graded assignments.

REVIEWING

ICLR 2021 (secondary), **ACL 2020** (secondary), **AKBC 2020** (secondary)

TECHNICAL SKILLS

Languages	Python, R, Bash, SQL, MATLAB, Java, C/C++, Scala, Make, JavaScript
Tools	PyTorch, fairseq, Ducttape, NumPy, pandas, MySQL
Misc.	Jupyter, Git, RStudio, LaTeX, JetBrains IDEs

COURSEWORK

Undergraduate GPA: 3.95   *Graduate GPA:* 4.0

Natural Language Processing / Artificial Intelligence: Computational Semantics, Applied Event Semantics, Deep Learning for Dialog, Natural Language Processing, Machine Learning, Causal Inference, Artificial Intelligence

Computational Cognitive Science: Computational Psycholinguistics, Logic in Language and Thought, Computational Cognitive Science

Mathematics: Computational Probability and Statistics, Information Theory, Pattern Theory, Computational Linear Algebra, Ordinary/Partial Differential Equations, Multivariate Calculus

Computer Science: Data Science, Probabilistic Algorithms, Sketching and Indexing, Prescriptive Analytics, Algorithms, Systems