

NATHANIEL WEIR

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EDUCATION

- 2019–Present **Johns Hopkins University**
Ph.D. in Computer Science
- 2019-2021 M.S.E. in Computer Science
Advisor: Benjamin Van Durme
- 2015–2019 **Brown University**
Sc.B. in 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

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

AWARDS

- 2021 - 2024 **NSF Graduate Research Fellowship**
- 2019 **CRA Outstanding Undergraduate Researcher Award, Honorable Mention**
- 2019 **SIGMOD Undergraduate Research Competition, 2nd place**
- 2019 **Brown Computer Science Senior Award**
- 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

- Summer 2021 **Microsoft Research – Montreal**
Intern
Researched systematic generalization and grounded one-shot learning of novel compositional tasks using hierarchical latent language.
- Fall 2019 **Center for Language and Speech Processing at Johns Hopkins University**
– Present *PhD Researcher*
Research includes semantically-guided sequence generation, probing neural language models for linguistically-grounded semantic phenomena, and commonsense inference of event sequences.
- Spring 2017 **Database Group at Brown University**
– May 2019 *Undergraduate Researcher*
Researched domain adaptation for neural semantic parsing of natural language queries into SQL.
- Summer 2016 **The MITRE Corporation**
Summer Co-op
Researched technology-aided professional collaborative work paradigms.

TEACHING EXPERIENCE

Brown University

Teaching Assistant

- Fall 2018 CSCI1570 Design and Analysis of Algorithms
Instructor: Paul Valiant
- Spring 2017, CSCI0220 Discrete Structures and Probability
Spring 2018 Instructor: Caroline Klivans

PUBLICATIONS

- 2022 **Nathaniel Weir**, Xingdi Yuan, Marc-Alexandre Côté, Matthew J. Hausknecht, Romain Laroche, Ida Momennejad, Harm van Seijen and Benjamin Van Durme. [One-Shot Learning from a Demonstration with Hierarchical Latent Language](#). ArXiv
- 2021 Jiefu Ou*, **Nathaniel Weir***, Anton Belyy*, Felix Yu, and Benjamin Van Durme. [InFillmore: Frame-Guided Language Generation with Bidirectional Context](#). *StarSem*.
- 2020 **Nathaniel Weir**, João Sedoc, and Benjamin Van Durme. [COD3S: Diverse Generation with Discrete Semantic Signatures](#). *EMNLP*. **Oral Presentation.**
- 2020 **Nathaniel Weir**, Adam Poliak, and Benjamin Van Durme. [Probing Neural Language Models for Human Tacit Assumptions](#). *CogSci*. **Oral Presentation.**
- 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](#). *SIGMOD*. **Oral Presentation.**
- 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](#). *SIGMOD*. **Demo Presentation.**
- 2017 Prasetya Utama, **Nathaniel Weir**, Carsten Binnig, and Ugur Cetintemel. [Voice-based Data Exploration: Chatting with your Database](#). *SCAI*.

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

REVIEWING

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

TECHNICAL SKILLS

Languages Python, R, Bash, C/C++, SQL, Java/JavaScript, MATLAB, Scala
Tools PyTorch, fairseq, Ducttape, NumPy, pandas, MySQL

Misc. Jupyter, Git, RStudio, L^AT_EX

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, Compilers, Language-based Security, Prescriptive Analytics, Algorithms, Systems