Peter Hase

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EDUCATION

The University of North Carolina at Chapel Hill *Fall 2019 – Present*
First-year PhD student in Computer Science *Chapel Hill, NC*
Research Area: Natural Language Processing | *Advisor:* Mohit Bansal

Duke University *Fall 2015 – Spring 2019*
BS in Statistical Science | Minor in Mathematics *Durham, NC*

RESEARCH INTERESTS

Interpretable and explainable machine learning, natural language processing (NLP), connections between NLP and reinforcement learning, AI safety.

PUBLICATIONS

Interpretable Image Recognition with Hierarchical Prototypes
In AAAI-HCOMP 2019. (25% acceptance rate) [pdf]
Peter Hase, Chaofan Chen, Oscar Li, Cynthia Rudin

Shall I Compare Thee to a Machine-Written Sonnet? An Approach to Algorithmic Sonnet Generation
Preprint on arXiv. [pdf]
John Benhardt, Peter Hase, Liuyi Zhu, Cynthia Rudin

AWARDS

William R. Kenan Jr. (Royster) Fellowship, UNC Chapel Hill *2019*
University fellowship awarded to one student in the 2019 cohort of computer science students, providing two full and three partial years of funding

First Prize in the PoetiX Literary Turing Test, Neukom Institute, Dartmouth College *2018*
Awarded for the top submission to the Neukom Institute's open competition for algorithmic sonnet generation

Nomination for Undergrad TA of the Year, Dept. of Statistical Science, Duke University *2018*
One of five undergrad nominations from faculty for the department's TA of the year award

ASA DataFest Honorable Mention, Dept. of Statistical Science, Duke University *2018*
Recognition for performance in a Duke-hosted data analysis competition for undergrad and grad students

Meritorious Winner in the Interdisciplinary Contest in Modeling, COMAP *2017*
Awarded for placement in the top 12% of over 8000 teams in the international modeling contest held by the Consortium for Mathematics and its Applications

AJ Tannenbaum Trinity Scholarship, Duke University *2015*
A full academic merit scholarship awarded to one student from Guilford County, NC

TEACHING

Probabilistic Machine Learning (Graduate), Teaching Assistant — *Spring 2019*
Dept. of Statistical Science, Duke University

Intro to AI, Teaching Assistant — *Spring 2019*
Dept. of Computer Science, Duke University

Elements of Machine Learning, Teaching Assistant — *Fall 2018*
Dept. of Computer Science, Duke University

Intro to Data Science, Teaching Assistant — *Spring 2018*
Dept. of Statistical Science, Duke University

Regression Analysis, Teaching Assistant — *Fall 2017*
Dept. of Statistical Science, Duke University

RESEARCH EXPERIENCE

Department of Computer Science, UNC Chapel Hill — *Summer 2019 – Present*
Research Assistant | *Supervisor:* Dr. Mohit Bansal — *Chapel Hill, NC*

- Translated two model explanation systems from the computer vision setting to work with text and tabular data
- Designed three human subject experiments for rigorously evaluating model interpretability
- Currently running experiments to compare three standard explanation methods with several new methods we are proposing

Department of Statistical Science, Duke University — *Summer 2018*
DOmath Researcher | *Supervisor:* Dr. Sayan Mukherjee — *Durham, NC*

- Numerically estimated a measure of model complexity, the topological entropy, for two dynamical systems, the logistic map and linear dynamical system
- Assessed how the reliability of inference for the linear dynamical system varies as a function of its entropy

Department of Neurobiology, **Duke University** — *Spring & Summer 2018*
Research Assistant | *Supervisor:* Dr. Jeff Beck — *Durham, NC*

- Implemented a hidden Markov model and linear dynamical system, each learned through variational Bayesian expectation maximization (VBEM)
- Modeled recordings of neuron activity in the actively singing Zebra finch; visualized and interpreted models' latent variable dynamics

Information Initiative at Duke — *Summer 2017*
Data+ Researcher | *Supervisor:* Sheng Jiang — *Durham, NC*

- Clustered Duke's alumni donors into groups with distinct giving behaviors via k-means
- Built logistic regression models to evaluate donors' philanthropic potential based on demographics and prior giving behavior

WORK EXPERIENCE

Clarity Campaign Labs — *Summer 2016*
Research Analyst — *Washington, DC*

- Visualized model predictions and political data; encoded surveys; drafted software guides for internal use

LEADERSHIP

Effective Altruism: Duke *Spring 2016 – Spring 2019*
Co-President *Durham, NC*

- Moderated weekly discussions related to Effective Altruism, the social movement promoting the use of reason and evidence to maximize the good you can do for the world
- Led club from 9 to 28 active members over my tenure
- Recorded over 15 Giving What We Can pledges (10% of all future income) in pledge drives since 2016