

# Peter Hase

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## EDUCATION

### **The University of North Carolina at Chapel Hill**

First-year PhD student in Computer Science

Research Area: Natural Language Processing | Advisor: [Mohit Bansal](#)

*Fall 2019 – Present*

*Chapel Hill, NC*

### **Duke University**

BS in Statistical Science | Minor in Mathematics

*Fall 2015 – Spring 2019*

*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 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, Tianlin Duan, Peter Hase, Liuyi Zhu, Cynthia Rudin

## AWARDS

### **William R. Kenan Jr. (Royster) Fellowship**, UNC Chapel Hill

Five-year fellowship awarded to one student in the 2019 cohort of Computer Science graduate students

*2019*

### **First Prize in the PoetiX Literary Turing Test**, Neukom Institute, Dartmouth College

Awarded for the top submission to the Neukom Institute's open competition for algorithmic sonnet generation

*2018*

### **Nomination for Undergrad TA of the Year**, Dept. of Statistical Science, Duke University

One of five undergrad nominations from faculty for the department's TA of the year award

*2018*

### **ASA DataFest Honorable Mention**, Dept. of Statistical Science, Duke University

Recognition for performance in a Duke-hosted data analysis competition for undergrad and grad students

*2018*

### **Meritorious Winner in the Mathematical Contest in Modeling**, COMAP

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

*2017*

### **AJ Tannenbaum Trinity Scholarship**, Duke University

A full academic merit scholarship awarded to one student from Guilford County, NC

*2015*

TEACHING	<b>Probabilistic Machine Learning (Graduate)</b> , Teaching Assistant Dept. of Statistical Science, Duke University	<i>Spring 2019</i>
	<b>Intro to AI</b> , Teaching Assistant Dept. of Computer Science, Duke University	<i>Spring 2019</i>
	<b>Elements of Machine Learning</b> , Teaching Assistant Dept. of Computer Science, Duke University	<i>Fall 2018</i>
	<b>Intro to Data Science</b> , Teaching Assistant Dept. of Statistical Science, Duke University	<i>Spring 2018</i>
	<b>Regression Analysis</b> , Teaching Assistant Dept. of Statistical Science, Duke University	<i>Fall 2017</i>
RESEARCH EXPERIENCE	<b>Department of Statistical Science, Duke University</b> DOmath Researcher   <i>Supervisor</i> : Dr. Sayan Mukherjee	<i>Summer 2018</i> <i>Durham, NC</i>
	<ul style="list-style-type: none"> <li>Numerically estimated a measure of model complexity, the topological entropy, for two dynamical systems, the logistic map and linear dynamical system</li> <li>Assessed how the reliability of inference for the linear dynamical system varies as a function of its entropy</li> </ul>	
	<b>Department of Neurobiology, Duke University</b> Research Assistant   <i>Supervisor</i> : Dr. Jeff Beck	<i>Spring &amp; Summer 2018</i> <i>Durham, NC</i>
	<ul style="list-style-type: none"> <li>Implemented a hidden Markov model and linear dynamical system, each learned through variational Bayesian expectation maximization (VBEM)</li> <li>Modeled recordings of neuron activity in the actively singing Zebra finch; visualized and interpreted models' latent variable dynamics</li> </ul>	
	<b>Information Initiative at Duke</b> Data+ Researcher   <i>Supervisor</i> : Sheng Jiang	<i>Summer 2017</i> <i>Durham, NC</i>
	<ul style="list-style-type: none"> <li>Clustered Duke's alumni donors into groups with distinct giving behaviors via k-means</li> <li>Built logistic regression models to evaluate donors' philanthropic potential based on demographics and prior giving behavior</li> </ul>	
WORK EXPERIENCE	<b>Clarity Campaign Labs</b> Research Analyst	<i>Summer 2016</i> <i>Washington, DC</i>
	<ul style="list-style-type: none"> <li>Visualized model predictions and political data; encoded surveys; drafted software guides for internal use</li> </ul>	
LEADERSHIP	<b>Effective Altruism: Duke</b> Co-President	<i>Fall 2016 – Spring 2019</i> <i>Durham, NC</i>
	<ul style="list-style-type: none"> <li>Moderated weekly discussions and activities related to Effective Altruism, the social movement promoting the use of reason and evidence to maximize impact in charity</li> <li>Led club from 9 to 28 active members over my tenure</li> <li>Recorded over 15 Giving What We Can pledges (10% of all future income) in pledge drives since 2015</li> </ul>	