

## Daniel Berenberg

**Current Address:**  
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**Permanent Address:**  
7 Abingdon Avenue  
Medford, NJ 08055

### Education

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**University of Vermont Graduate College**, Burlington, Vermont *2016 - 2018*  
*M.S., Computer Science* — 3.9/4.0

⇒ Selected Courses: Deep Learning, Machine Learning, Reinforcement Learning,  
Principles of Complex Systems, Modelling Complex Systems

**University of Vermont CEMS**, Burlington, Vermont *2013 - 2017*  
*B.S., Mathematics* — 3.41/4.0

⇒ Minor: Computer Science; 40+ credits in Russian

**St. Petersburg University**, St. Petersburg, Russia *Fall 2015*  
*CIEE Study Abroad Program*

**Middlebury College**, Middlebury, Vermont *Summer 2015*  
*Summer Intensive Russian Program*

### Professional Experience

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**Vermont Complex Systems Center - Bagrow Lab**, Burlington, Vermont *Fall 2017 - Current*  
*Research Assistant*

⇒ Intersecting applied mathematics and statistics with NLP/NLU to research the complex network of human causal attribution. Duties include developing robust Python-based computational linguistics research tools and implementing deep neural language models using Keras and Tensorflow.

**Vermont Artificial Intelligence Laboratory (VAiL)**, Burlington, Vermont *Summer 2018*  
*Machine Learning Engineer*

⇒ Designed and constructed AI system capable of predicting heart rate and respiratory rate from a noisy dataset of smart phone videos.  
⇒ Implemented advanced video preprocessing and manipulation software using various Python libraries including OpenCV, PIL, numpy, and scipy.  
⇒ Developed high performance 3D convolutional network using Keras and Tensorflow.

**The Flatiron Institute - Computational Biology Lab**, Manhattan, New York *Summer 2017*  
*Research Intern*

⇒ Utilized advanced protein fold simulation codebase (Rosetta) and molecular visualization software (PyMOL) to research physically stable conformations of empirically unobserved protein structures. Duties included implementing various python and bash scripts to interface with the C++ codebase.

**University of Vermont Computer Science**, Burlington, Vermont *Spring 2017*  
*Teaching Assistant* - Introduction to Java

### Publications

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**Neural language representations predict outcomes of scientific research**  
J.P. Bagrow, D. Berenberg, and J. Bongard, Preprint (2018)

### Skills

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**Programming/Scripting:** Python, C/C++, Java, Unix Shell/Bash, Ocaml, Web Stack

**Frameworks/Tools:** Tensorflow, Keras, Scikit-Learn, scipy, numpy, git, L<sup>A</sup>T<sub>E</sub>X, Wordpress

**Technical:** OOP, functional programming, Agile development; networking, cloud/cluster computing

**Languages:** Russian ~ 2.1 on Language Proficiency Index

**Other courses:** Algorithm design, Data science, Software engineering, Operating systems

### Leadership & Other Achievements

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*UVM Computer Science Fair, 3<sup>rd</sup> place* *Fall 2017*

*Dean's List* *Spring 2017*

*Treasurer, UVM Delta Tau Delta* *2017*

*Departmental Honors, Russian* *2015, 2016*