

ALEXANDER FORSYTH

New York, New York

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EDUCATION

- Massachusetts Institute of Technology** **Cambridge, MA**
M.Eng. Computer Science and Engineering · Concentration: Machine Learning June 2017
GPA: 4.9/5.0
- Massachusetts Institute of Technology** **Cambridge, MA**
S.B. Computer Science and Engineering June 2017
GPA: 4.9/5.0
- Episcopal High School** **Jacksonville, FL**
GPA: 4.4/4.0 · Intel STS and Siemens Semifinalist · ISEF 2nd Place 2012 and 4th Place 2013 Aug. 2006 - May 2013

WORK EXPERIENCE

- Google** **New York, NY**
Software Engineer Sept. 2017 - Present
 - SWE working on structured query understanding for Google Search.
- Khan Academy** **Mountain View, CA**
Data Science Intern May 2016 - Aug. 2016
 - Built infrastructure to collect site health metrics and to alert upon statistically significant failures.
 - Analyzed the SAT test preparation product's effectiveness across various demographics.
 - Increased the accuracy of site monitoring and health checks via improved feature selection.
 - Worked with the engineering team on everyday tasks across the full web stack.
- Bevspot** **Boston, MA**
Software Engineering Intern January 2016
 - Designed and implemented a data structure to eliminate race conditions in a user facing web app feature.
 - Improved a subset of the data model to increase maintainability and to support unit/integration tests.
- Akamai Technologies** **Cambridge, MA**
Software Engineering Intern May 2015 - Aug. 2015
 - Analyzed algorithms forming the theoretical basis of current and future Akamai content distribution networks.
 - Implemented theory based models of production systems to aid in next-generation network design.
 - Developed tools in Python for data analysis and visualization.

RESEARCH EXPERIENCE

- MIT CSAIL and Dana-Farber Cancer Institute** **Cambridge, MA**
M.Eng. Thesis Jan. 2016 - May 2017
 - Worked under Professor Regina Barzilay (CSAIL) and Dr. Charlotta Lindvall (DFCI) to use Natural Language Processing (NLP) and machine learning algorithms on electronic health records in order to improve disease treatment.
 - Developed an NLP-based information extraction pipeline that extracted patient symptoms from free-text physician notes with high precision/recall.
 - Applied NLP/ML to increase precision of classifying non-responders to a treatment for heart failure from 57.9 to 89.5% compared to current methods.
- MIT Laboratory for Computational Biology and Biophysics (LCBB)** **Cambridge, MA**
Undergraduate Researcher (UROP) June 2014 - Dec. 2014
 - Developed data analysis tools to predict protein-DNA interactions including a new protein-DNA docking algorithm.
- University of North Florida, Mayo Clinic, Episcopal High School** **Jacksonville, FL**
High School Student Researcher Aug. 2011 - May 2013
 - Improved the efficiency of an algorithm used in drug discovery to search through large datasets of small molecules in order to find viable drug candidates by factors of 100-1000 in common searches with a new candidate filtering method.
 - Used the algorithm to identify potential drugs for cancer treatment and tested validity with wet lab work.

LEADERSHIP AND ACTIVITIES

- Eta Kappa Nu**, Member, 6.046: Design and Analysis of Algorithms Tutor Oct. 2015 - May 2017
- Baker House**, Executive Board: VP of Resident Orientation May 2015 - December 2016
- Rockstar Energy Drink**, Campus Brand Ambassador Feb. 2014 - December 2016
- Phi Delta Theta**, Social, Warden, Scholarship, Public Relations, Awards Chairman Jan. 2014 - December 2015

SKILLS AND INTERESTS

Skills ordered from most to least proficient:

- **Languages:** Python, C++, Javascript, HTML/CSS, SQL, bash, Java.
- **Tools:** Unix, git, Vim, sklearn, numpy, Django, L^AT_EX, pandas.
- **Selected CS Interests:** Machine learning, natural language processing, algorithms.
- **General Interests:** DJing, electronic music production, squash, snowboarding.