



# Cyrus Cousins

Curriculum Vitae

## PERSONAL DETAILS

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<i>Birth:</i>	December 31, 1992	<i>Mail:</i>	cyrus.cousins@tufts.edu
<i>Home:</i>	12 John Street, Barrington RI	<i>Web:</i>	www.eecs.tufts.edu/~ccousi01/
<i>Phone:</i>	(401) 487-3104	<i>Code:</i>	www.github.com/cyruscousins/

## EDUCATION

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**Undergraduate** 2011-2015  
 TUFTS UNIVERSITY  
 Working towards a Bachelor's of Science in Computer Science, Mathematics, and Biology.  
**Cumulative GPA:** 3.69.

## WORK EXPERIENCE

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**Embedded Systems Test Engineer Intern** 2012  
*BBN Technologies, full time*  
 Design, creation, and maintenance of a regression test suite for sensor processing embedded systems software, and investigation, documentation, and fixing of bugs.

**Test Engineer Intern** 2013  
*Microsoft Corporation, full time*  
 Development of client-server web service to schedule testing related tasks on virtual machines using the API of an existing proprietary VM management system.

**Software Developer Intern** 2014  
*Microsoft Corporation, full time*  
 Development of a system to search for PII, generate summary statistics, and characterize petabyte scale data streams coming from cloud server logs using proprietary distributed computing technology.

**Teaching Assistant** 2013-present  
*Greg Aloupis @ Tufts University, part time*  
 Grading and office hours for Algorithms (Comp 160) and Computational Geometry (Comp 163).

**Teaching Assistant** 2013-present  
*Donna Slonim @ Tufts University, part time*  
 Lab administration, assignment creation, project development, and office hours for Computational Biology (Comp 167) and Bioinformatics (Comp 7)

## SKILLS

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<i>Natural Languages</i>	English <i>Native</i> , Spanish <i>Proficient</i> , French <i>Basic</i> , Japanese <i>Basic</i>
<i>Programming Languages</i>	<b>Fluent:</b> C, C++, C#, JAVA, METALANGUAGE, HASKELL. <b>Familiar:</b> SCHEME, LISP, GO, F#, R, SQL, x86 ASM, GLSL.
<i>Technologies</i>	<b>Scripting:</b> BASH, PYTHON, PERL, JAVASCRIPT, POWERSHELL. L <sup>A</sup> T <sub>E</sub> X, Unix tools, Linux admin, Git, Make, Windows dev, HTML/CSS, Jenkins.

## FIELDS OF STUDY

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COURSE NUMBERS FROM TUFTS UNIVERSITY. 000 LEVEL: UNDERGRADUATE. 100 LEVEL: MIXED. 200 LEVEL: GRADUATE.

**Evolutionary Biology:** Introductory Course (Bio 143), General Genetics (Bio 41), Seminar in Molecular Biology and Genetics (Bio 188), Research Seminar on Computational Methods in Molecular Evolution (Bio 197).

**Probability:** Introductory Course (Math 161), study of computational methods for inference problems (Comp 150PP), and research on applications of probabilistic classifiers.

**Calculus of Infinitesimals:** Multivariate Calculus (Math 42, formerly 13) and 2 courses Real Analysis (Math 135-136).

**Machine Learning:** Introductory course (Comp 135), research on anomaly detection with Donna Slonim, independent research in natural language classification.

**Algorithms:** Introductory course (Comp 160), Graduate Seminar (Comp 260).

**Computational Geometry:** Introductory Course (Comp 163), visual implementation of several convex hull algorithms.

**Computational Biology:** Introductory Course (Comp 167), Special Topics Research Seminar on elementary flux module calculation with Soha Hassoun (Comp 150-01), university research with Donna Slonim.

**Programming Languages:** Intro Course (Comp 105), seminars in Programming Language Design (Comp 150PLD) and Probabilistic Programming Languages (Comp 150PP). Creation of embedded probabilistic language HarmLang.

## HONORS AND POSITIONS

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### COMAP Mathematical Contest in Modelling

HONORABLE MENTION

Paper (available on website), computer model and simplified Poisson model of highway lane usage.

2014

### COMAP Mathematical Contest in Modelling

SUCCESSFUL PARTICIPANT

Simulation and paper on modelling heat transfer during cooking of baked goods.

2013

### Computer Science Exchange Officer

Officer of Tufts University's only student run computer science interest group.

2012-present

### Deans List

All 6 completed collegiac semesters.

2011-present

### Track Captain

Long distance captain of BHS track team.

2011

### Biology Club President

President of the Biology Club of Barrington High School.

2010-2011

### National Honor Society

Member.

2011

## NOTABLE PROJECTS

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### Computational Geometry algorithm implementations

Animated interactive graphical implementation of the Kirkpatrick-Seidel "Ultimate Planar Convex Hull Algorithm" and others (see website).

2013

### Text classification algorithm design and implementation

Algorithm used to classify newspaper articles by author with little training data (see website).

2014

### Computational Biology Research in Biological Anomaly Detection

Research on improvements to the FRaC and CSAX algorithms with Donna Slonim.

2014

### Probabilistic Programming Language Design and Implementation

Class project for Norman Ramsey's Probabilistic Programming Languages and Kathleen Fisher's Programming Language Design courses. *HarmLang* is a probabilistic programming language for analysis of music, particularly chord progressions (see website).

2014