School Address:
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# E. LILY SEROPIAN

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## EDUCATION

- Massachusetts Institute of Technology (MIT) – *Cambridge, MA* GPA 4.7/5.0
  - June 2015 candidate for Bachelor of Science Degree in Computer Science.
  - Concentration in Spanish.
  - Relevant Completed Coursework: Software Design, Algorithms, Computer Systems, Machine Learning, Digital Architecture, Computational Biology, Discrete Mathematics, Probability.
- Brown University - *Providence, RI* June 2010
  - Took two-week program in Fundamentals of Engineering Design with a focus on optimization through calculus.
- Yale University - *New Haven, CT* Fall 2010
  - Received scholarship through Governor's Scholar Program to take Mathematical Tools for Computer Science.
- Worcester Polytechnic Institute (WPI) - *Worcester, MA* June 2009
  - Took two-week program in Electrical and Computer Engineering with a focus on building working devices.
- North Haven High School - *North Haven, CT* Fall 2007 - Spring 2011
  - Valedictorian in a class of 265 students.
  - Independent studies in data structures and genetic algorithms.
  - Lab assistant for introductory programming class taught in C++.
  - Teaching assistant for French I.
  - Vice President of Mu Alpha Theta, President of French Honor Society, and Member of National Honor Society.
  - National Merit Scholar.

## SKILLS

- Programming/markup languages: Java, Python, JavaScript, node.js, Google Closure, LaTeX, HTML, CSS, Soy.
- Technologies: Git, JUnit, PyUnit, JSUnit, NumPy, SciPy, Eclipse, Vim, Idle, BlueJ, Linux, Mac, Windows.
- Human languages: Spanish - conversational, French - basic.
- Interests: knitting/crocheting, music, language, scifi, teaching, women's and gender studies, the art of rationality.

## WORK EXPERIENCE

- Rest Devices - *Boston, MA* - Intern January 2014
  - Worked extensively on node.js server for a smart baby monitor. Implemented firmware updates for monitor, internal dashboard of connected devices, and live streaming of audio from monitor to iPhone app.
- Google - *Cambridge, MA* - Sophomore Engineering Practicum Intern Summer/Fall 2013
  - Developed web tools that provide a user-friendly interface for creating, viewing, and abstracting XML queries to a flight search engine, for both internal and external usage.
  - Invited to continue into the Fall Semester as a part-time developer. In the upcoming months, will use machine learning techniques to cluster custom XML flight search queries for analytics purposes.
  - Technologies employed: JavaScript, Closure, HTML, CSS, Soy, Python.
- Massachusetts Institute of Technology - *Cambridge, MA* - Lab Assistant for 6.005 Spring 2013
  - Guided students through homework and exam preparation in office hours for a software development class in Java. Graded homework and exams. Supervised and participated in the code review process.
- iD Tech Camps – *Fairfield, CT* - Instructor Summer 2012
  - Taught 5 week-long introductory programming courses in Java to students ages 12-17, 8 students per week.
  - Covered fundamentals, object-oriented programming, and graphics (swing and 2D).
- Massachusetts Institute of Technology - *Cambridge, MA* - Lab Assistant for 6.01 Spring 2012
  - Guided students through python and electronics design labs in Introduction to EECS while taking the class through the Advanced Lab Assistant Program. Tested the labs for correctness and clarity. Labs used a combination of python, circuit simulation, and physical circuit creation through breadboarding to program robots.
- Vecna Technologies – *Cambridge, MA* - Software Intern January 2012
  - Designed and prototyped an interface to create boolean logic for branching survey transitions.

- Technologies employed: JavaScript, jQuery, HTML, CSS.

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**PROJECTS**

- Smart Folder System Design - Individual Project — Spring 2014
  - Designed (but did not implement) a UNIX operating system extension to provide Smart Folder functionality through virtual directories of symbolic links.
- RNA Folding Algorithm - Partner Project — Fall 2013
  - Designed and implemented a technique to improve the theoretical runtime of an existing dynamic programming solution to computing RNA secondary structure. Partner project involving research paper and formal presentation. Results and code available at github.com/lilyseropian/rna-folding (Python).
- CPU Simulator - Individual Project — Fall 2013
  - Simulated a processor from the level of logic gates to the ability to execute assembly code (JSim).
- Live Collaborative Text Editor - Group Project — December 2013
  - Designed and implemented the UI for a Google Docs-like editor; debugged and documented group code (Java).
- ABC Music Player - Group Project — November 2013
  - Designed and implemented the Abstract Syntax Tree for representing and playing a piece of music (Java).
- 'Blob' and Sudoku Puzzle Solvers - Group Programming Competitions — Spring 2011, Spring 2010
  - Led a group of six to design and implement efficient puzzle solvers for a state-wide competition (Java).
- Crocheted the Lorenz Manifold - Independent Study in Differential Equations — Fall 2010
  - http://www.math.auckland.ac.nz/~hinke/crochet/othermans.html (tenth down from the top).

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**ACTIVITIES**

- Next Act - *Cambridge, MA* - Cast Member — Spring 2013
  - Performed in an entirely student-run musical production of *Elton John and Tim Rice's Aida*.
- Study Abroad: Independent Activities Period (IAP) Madrid – *Madrid, Spain* — January 2013
  - Took intensive Spanish II in Madrid, stayed with a host family and experienced Spanish language and culture.
- MIT Undergraduate Practice Opportunities Program – *Cambridge, MA* — Fall 2012 - Spring 2013
  - Participated in a professional development and engineering leadership program for MIT sophomores that focused on leadership, communication, critical thinking, and decision making in a workplace environment.
- Volunteer with the MIT Admissions Office - *Cambridge, MA* — Fall 2012
  - Showed prospective students what the daily life of an MIT student is like by bringing them to classes and lunch. Gave advice about the college admission process.
- Secular Society of MIT - *Cambridge, MA* — Fall 2012
  - Attended weekly discussion meetings about big questions in philosophy and the impact of religion on society.
- Future Problem Solving - *North Haven High School, CT* — 2007 - 2012
  - Participated in an academic competition focused on identifying challenges and exploring solutions to current world issues projected into the future.
  - Placed individually and in a team of four on the international level in 2008 - 2011.
  - Volunteered as an evaluator for younger divisions of the competition in 2010 - 2012.
- Computer Club - *North Haven High School, CT* - President — 2007 - 2011
  - Planned and led weekly meetings to prepare for the American Computer Science League All-Stars competitions.
  - Individual top-scorer, led team to All-Stars twice, and organized hosting of All-Stars at North Haven High School.
  - Taught topics covered by the competition including number systems, recursive functions, programming in BASIC, evaluating LISP expressions, and data structures.
  - Placed individually and as a team in General Electric's written programming competition on Java in 2010 and 2011. Found a question with an incorrect answer and identified the bug in the code that incorrectly verified the answer.

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**MENTORING**

- Campus Preview Weekend - *MIT* - Host — April 2014
  - Hosted a prospective MIT student for four days.
- Blueprint Hackathon - *MIT and Google* - Mentor — February 2014
  - Assisted high school students with web programming in day-long hackathon. Gave advice on strategy and taught introductory HTML, CSS, and Javascript.

- Introduce A Girl To Engineering - *MIT and Boston Public Library* - Volunteer February 2014
  - Ran a booth that taught the light spectrum through glow-in-the-dark bubbles. Event introduced elementary and middle school girls to the possibility of a career in STEM.
- MIT Residence Exploration - *MIT Simmons Hall* - Volunteer August 2013
  - Throughout MIT's weeklong-orientation, acted as a mentor to new freshmen in Simmons Hall. Made pancakes for many hungry freshmen every morning. Organized making vegan food available at every event with food.