ALEXANDRA (ALI) R. FORELLI

HARVARD UNIVERSITY

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Education

HARVARD UNIVERSITY — Cambridge, MA
A.B/S.M in Mechanical Engineering with a Secondary in Computer Science — Expected May 2016
Undergraduate degree completed in three years, Master's in fourth year
Concentration GPA 3.84, Cumulative GPA 3.73
Radcliffe Varsity Crew Team, 25 hrs/wk commitment — 2012-2016
Chamber Music - Flute — 2012-2016

MIDDLESEX SCHOOL — Concord, MA
Varsity Soccer, Basketball, and Crew; 1st Flute in Chamber Ensemble — Graduated June, 2012

Relevant Coursework

Engineering	Thermodynamics, Mechanics of Solids, Mechanical Systems, Materials Science, Computer-Aided Machine Design, The Joy of Electronics, Fluid Mechanics, Heat Transfer, MEMS
Mathematics	Multivariable Calculus, Linear Algebra and Differential Equations, Statistics for Economics, Ordinary and Partial Differential Equations
Physics	Mechanics and Relativity, Electromagnetism, Chemistry in Materials Science and Engineering
Computer Science	Intro Computer Science I and II, Systems Programming and Machine Organization, Data Science

Awards/Test Scores

Semi-Finalist National Merit Program (2012)
Highest GPA 2009, 2010, 2011, 2012
Andrew M. Dawson Physics Prize (2012)
Trustees' Prize in Mathematics (2012)
Lawrence Terry Award (2011)

National AP Scholar (2012)
2370 – SAT (800 M, 770 CR, 800 W)
SAT Subject Tests – 800 (Physics), 780 (Chemistry), 780 (Math I), 770 (Math II)

5 – AP BC Calc, Physics B, Physics C Mech and E&M, English Language, English Lit, Music Theory, Latin Lit, European History, U.S History

Work Experience

WAYFAIR — Boston, MA
Software Engineering Intern — Summer 2015

- Built a web service in C# to feed urls to KAPOW crawler bots for competitor data scraping
- Created Microsoft Messaging Queues (MSMQ) to store competitor urls
- Replaced existing MySQL to MSSQL transfer with local Redis storage and batch insert into MSSQL, bypassing MySQL and greatly increasing speed and efficiency

HOWE BIOROBOTICS LAB: HARVARD UNIVERSITY — Cambridge, MA
Researcher — Summer, Fall 2014

- Worked with Arduino, MATLAB, and Phidgets
- Designed and built a tension-sensing apparatus for catheter steering
- Developed code to regulate tension and allow for uniform catheter stiffening

THE WYSS INSTITUTE AT HARVARD UNIVERSITY — Cambridge, MA
Researcher — Summer, Fall 2013

- Developed a testing method for the automatic retracting cranial drilling device
- Machined all of the pieces for the testing apparatus
- Performed tests on all three models of the device, and conducted analyses of the data.

SEAS RACING TEAM — Cambridge, MA
Machinist and lead engineer for steering — 2014-Present

- Designed and built steering system for fuel-efficient car competition
- Also played a major role in the fabrication of the carbon fiber chassis and carbon-kevlar body shell (vacuum bagging method)

Skills

Programming:	C, C#, PHP, MSSQL, Redis, MSMQ, MySQL, Python, JavaScript, x86 Assembly, OCaml, HTML/CSS
Software:	Arduino, MATLAB, Mathematica, SolidWorks (AutoCAD), COMSOL, Phidgets, Visual Studio, CorelDRAW, MasterCAM, Stata, LoggerPro, and experience with 3D printing.
Machining:	CNC milling, laser cutter, lathe, drill press, band saw, vacuum bagging, MIG and TIG welding, carbon fiber fabrication and manipulation, and many other machines/tools. Full certification in Harvard Machine Shop.
Circuits:	bread boarding, circuit design, experience with op amps, BJTs, photo transistors, diodes, capacitors.