

# NATHAN TARRH

SOFTWARE DEVELOPER & STUDENT

nate@natetarrh.com  
(781) 799-8438  
Somerville, MA

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## Education

### Tufts University

Bachelor of Science in Computer Science

2010-2014 (expected)

GPA: 3.50

CS coursework: Algorithms, Data Structures, Machine Structure & Assembly Language Programming, Programming Languages, Seminar in Advanced Functional Programming (Fall '13), Web Programming, Computer Security (Fall '13), Operating Systems (Fall '13), Discrete Math, Calculus I & II  
Selected coursework: Entrepreneurial Leadership (independent study), Language - Thought and Culture, Postmodernism and Film, Studies in Jazz (Fall '13), Technological Tools for Learning

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## Experience

### Harvey Mudd College

Research Assistant

June 2013-present

Software development for the Intelligent Music Software project at the Harvey Mudd Research Experience for Undergraduates. Implementation of context-free grammar parsing (CYK algorithm) to create higher-order roadmaps for jazz chord progressions. Optimization of algorithmic matching with 100-150% speedup.

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### WMFO Medford — 91.5 FM

Software Development

February 2012-present

Full-stack software development for student-run community radio station. Projects include: web scraper to find lyrics and flag explicit tracks (digital catalog of ~250 thousand songs), taste profiler using playlist history and Echo Nest API to recommend radio shows to listeners, server administration for digital catalog, station wiki, and public website.

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### Tufts Center for Engineering Education and Outreach

Research and Teaching Assistant

May 2011-present

Undergraduate assistant for the Integrating Engineering and Literacy project. Collection, organization, and transcription of video data and materials for classrooms. Preparation of materials, demonstrations, and presentations for teacher workshops. LEGO robotics instruction in K-8 student workshops. Design, editing, and preparation of teacher workbooks for professional development workshops.

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## Technical

Languages:	C/C++	Python
	Java	JavaScript
Frameworks:	Node.js/Express	Sinatra
Other:	*nix toolkit	SVN/Git