NATHAN TARRH

COMPUTER SCIENCE & EDUCATION

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Somerville, MA

Education

Tufts University
2010-2014 (expected)

Computer Science and Education
GPA: 3.50

CS coursework: Algorithms, Data Structures, Machine Structure & Assembly Language Programming, Programming Languages (Spring '13), Web Programming (Spring '13)
Education coursework: Observing Theory in Action, Technological Tools for Learning (Spring '13)

Experience

WMFO Medford — 91.5 FM
2012-present

Software Development

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, DJ portal that integrates playlist logging, listener statistics, and access to the station's social media outlets.

Tufts Center for Engineering Education and Outreach
2011-present

Research and Teaching Assistant

Undergraduate assistant with the Integrating Engineering and Literacy project (NSF-grant-funded). Collection and organization 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. Content creation and maintenance for teacher support website.

Projects

Show Recommender

Profiles WMFO radio shows using their playlist history and matches them with user-selected attributes to suggest compatible listeners. Written in Python using the Pyechonest library for The Echo Nest API.

Lyric Scraper

Grabs lyrics from multiple sites and passes them through a regex, flagging explicit tracks. First written in C with cURL, then Python and Beautiful Soup, and finally Go for its MySQL querying.

Universal Machine

Universal virtual machine with 14 instruction set (turing-complete). Also implemented a macro instruction assembler and RPN calculator. Written in C, and runs over 2 billion instructions in 20 seconds.

Technical

Immediately productive:	C/C++	Git
Rapidly improving:	Python	Unix CLI
Experience with:	Javascript	HTML5/CSS3