Nathan Lilienthal

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Languages: Ruby, Rust, C/C++, LUA, Racket, Shell. ECMAScript (JS), Python, Java, and more...
Systems: UNIX, Linux, Git + Hub/Lab, Rails, Postgres, SQLite, AVR/ARM, WoW (ask me about it).

Professional Experience

- **Northeastern University** **Boston, MA**
  Research Programmer, Intelligence Advanced Research Projects Activity, HECTOR *Aug. 2019 – Aug. 2020*
  - Collaberativly developed a hybrid-mode secure programming language design for multi-party computation (MPC)
  - Represented my team, at both remote and in-person technical exchange meetings with other researchers
  - Built a prototype implementation of our language, which is forked from the Rust programming language
  - Began a formalism for our language(s), which will include sound typing rules, and reductions

  Teaching Assistant, Fundamentals of Computer Science 1 *Fall of 2012, 2013, 2014, and 2015*
  - Conducted mini lectures, monitored class progress, and answered students' questions
  - Discovered new ways to present concepts that facilitated student understanding
  - Assisted students during established office hours

- **Forward Financing Inc.** **Boston, MA**
  Sr. Software Engineer *May 2018 – Aug. 2019*
  - Developed a client wrapper for an Algolia search implementation
  - Performed various application performance improvements, often caused by unacceptable response times, quickly
  - Planned architecture refactoring, including object model improvements, and a new data permissions system
  - Lead efforts to create an orchestration CLI for managing a complex Heroku + Salesforce microservice system
  - Mentored the cooperative university students by providing deep code reviews, and spending time pairing on problems

- **HOMER Energy** **Boulder, CO**
  Software Developer, Summer Intern *Jul. 2017 - Nov. 2017, Summer 2012*
  - Built API integrations for the HOMER C# application, including REST and CSV file APIs, which involved a general refactoring of the code which imports data, complete with added tests
  - Developed an internal tool to view the Google Protocol Buffer used to pass values between all parts of the application, allowing developers to quickly see what the values of program inputs and outputs were
  - Created a web based front-end for HOMER in Rails, which served at the starting point for another version of HOMER, and provided a proof of concept for how to integrate the HOMER API with a webserver

- **Apple Inc.** **Cupertino, CA**
  Software Engineer *Jan. 2015 – Aug. 2015, Jul. 2016 – Jul. 2017*
  - Built a Ruby library (`radic`) and CLI (`radish`) for interacting with Apple's bug management system (aka Radar)
  - Took part in a broader internal web design initiative to create common components for the hardware teams
  - Contributed to an internal tool for managing hardware validation, which was somewhat inspired by Travis CI
  - Contributed to another internal tool for analysing large amounts of pre-production device test data

- **Americas Test Kitchen** **Boston, MA**
  Web Developer *Jan. 2014 – June 2014*
  - Pushed code to the front-end and back-end for all four of Americas Test Kitchen's websites, including bug fixes and technical infrastructure upgrades
  - Built modularized components to abstract functionality found common throughout the companies codebase

- **Bluesocket - Adtran** **Burlington, MA**
  Software Developer *Jan. 2013 – June 2013*
  - Developed an automated build system, which allowed developers to see how their changes would affect a real build of the system, which reduced turnaround time, allowing anyone to easily run a build
  - Addressed user reported issues in Ruby/Rails and LUA, including hardening validations and updating database migrations for old versions of the software
  - Designed a class/model structure for users and accesspoints, which allowed the back-end to represent clients of individual accesspoints

Some Interests: Teaching, Microelectronics, Woodworking, Music, Gaming, Skiing, Cats, ...

Education

- **Northeastern University** **Boston, MA**
  College of Computer and Information Science *2011 – 2016*
  Bachelor of Science in Computer Science
  - Relevant Courses:
    * Programming Languages
    * Special Topics in Programming Languages
    * Compilers
    * Systems and Networks,
    * Computer Organization
    * Software Development (aka HELL),
    * Theory of Computation
    * Algorithms and Data Structures
    * Fundamentals of Computer Science 1 & 2,
    * Object Oriented Design,
    * Artificial Intelligence
    * Logic and Computation,
    * Combinatorics
  - Clubs & Extracurriculars:
    * NU Hacks
    * Hack Beanpot
    * ACM