NolanEssigmann

developer + mathematician who loves solving problems

contact

229 Vassar Street
Cambridge
Massachusetts
02139
+1 (857) 259 0407
Email
nhessigmann@gmail.com
Github
github.com/nessig
Website
nessig.github.io

programming languages

♥ Python
JavaScript, Go
C++, Julia, SQL
CSS3 & HTML5

interests & activities

software engineering
web development
data science
statistics
teaching
forestry
gōjū-ryū karate
cycling
EMT

education

2010–2015 **Bachelor of Science in Mathematics** — **Massachusetts Institute of Technology**
Focus on experimental math using computation to investigate mathematical objects, and pure math: the creation and study of abstractions.

experience

summer 2015 **Micmac Environmental Health Lab** — **The Aroostook Band of Micmacs**
Volunteer Lab Technician in Environmental Health
Repaired atomic absorption spectrometer for the Micmac Tribe, allowing them to test tribal waters for toxins in-house; work helped create a new revenue engine.

2013-2014 **Laboratory of Professor Adam Arkin** — **University of California, Berkeley**
Lawrence Berkeley National Laboratory
Undergraduate Researcher in Synthetic and Systems Biology
Spent gap year working at UC Berkeley designing high-throughput protein-protein interactomics pipelines using Python and SQL.

2011-2012 **Laboratory of Professor Alice Ting** — **Massachusetts Institute of Technology**
Undergraduate Researcher in Chemical Biology
Used genetic engineering tools along with molecular modeling Python libraries to design and rationally construct molecular sensors. Interim lab manager.

technical skills

Backend Python: significant exp. developing applications/services. Julia and C++: exp. writing and utilizing out-of-core, vectorized, and cache-friendly algorithms/DS. Golang: exp. with distributed messaging systems and implementation of common concurrency patterns. Exp. with Flask, Django, cherrypy, unittest/mock, ZeroMQ, Redis, Postgres, Neo4j, MongoDB, Gunicorn, *nix, Google (GAE, GCE), Docker (kubernetes, Zipkin), Valgrind, Nginx.

Frontend React (npm, webpack, babel, ES6-7), Redux, D3.js, Angular (1.x), SASS, Bootstrap, Material-UI, Materialize.

Statistics Exp. in theory and application of statistics and machine learning. ♥ Pandas.

projects

2D Root Visualizer Web app/service for visualizing fractals written in C++, Python, and Javascript. Tools used: OpenMP, ZeroMQ, Websockets, and HTML5 Canvas.

Riemann Hypothesis Verification Tools to computationally verify the Riemann Hypothesis for trillions of zeros and the statistical analysis of the zeros of the Riemann Zeta function and the spectra of random Hermitian matrices (Python, Julia, C++).

Business Intelligence Dashboard React app for realtime(ish) reporting of BI data. React, D3.js (for math, not DOM manipulation), Go, Neo4j, MongoDB.