

# Nate Tracy-Amoroso

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## Education

Northwestern University, Evanston, IL  
McCormick School of Engineering  
MS & BS, Computer Science

Expected Graduation: May 2021  
Cumulative GPA: 3.7/4.0

## Relevant Work Experience

Full Stack Engineering Intern, Uncountable Inc, San Francisco, CA June 2020 – September 2020

- Worked on the engineering team to rapidly test the value of and deliver new features to clients.
- Speedup CI/CD pipeline by 300% through progressive linting, docker optimizations, and more.
- Designed and implemented a re-usable component to allow users to select points by dragging the mouse on top of graphs. Integrated this component with many graphs in the platform to allow easily filtering and outlier removal for training ML models workflows.
- Extended a 2d/3d chemical viewer to search a chemicals database and import matching structures.

Web Team Developer, McCormick School of Engineering, NU, Evanston, IL January 2018 – June 2020

- Designed and developed a system to track the faculty tenure process from start to finish, provisioning multiple levels of system access on the fly to professors, students, and department administrators based on API data from Northwestern HR.
- Configured proper content security policies, headers, and worked to prevent attacks like XSS and SQL injection for new and existing projects.

Engineering Intern, [Snurr Research Lab](#), NU, Evanston, IL 2019 - Present

- Worked on high throughput screening of metal organic frameworks to identify top candidates for gas separations like Xe/Kr, nitrogen adsorption, and hydrogen storage, using NU's supercomputing cluster.
- Combined my own with legacy data into a new database complete with web front-end and API called mofDB, [mof.tech.northwestern.edu](http://mof.tech.northwestern.edu), using a JSON format developed by NIST and expanded for computational data. To date about 6MM entries and used by about 70 researchers a month.

Teaching Assistant, NU, Evanston, IL 2018 - 2019

Assisted with grading and helped students with course content during weekly office hours.

- CS 214 Data Structures. Topics include: abstract data types, complexity analysis, BST, hash tables, bloom filters.
- CS 213 Intro. to Computer Systems. Topics include: memory allocation, x86-64 assembly, bit level operations, GDB debugging, and disassembly.

Intern, [Orbit Media Studios](#), Chicago, IL Summer 2017 and Winter 2018

- Worked in the development group maintaining existing websites and securing old installations. This included setting up SSL for legacy sites, version control with Git, and SSH key management.

Creator, [Herpetology.pro](http://Herpetology.pro), educational responsive mobile first web application ([open source](#)) 2019 - Present

- Built a platform to help people learn about reptiles and amphibians in their area using crowdsourced data from the herpmapper project. Database includes 16,000 species, 356,000 photos, and 45,000 regions. Around 100 monthly users primarily the US, Canada, UK, and Australia.

## Technical Skills

Languages: Advanced ( Ruby, Python, JavaScript ES6, SQL ) Intermediate ( Java, C/C++, Posix, SQL )

Parallel Programming: CUDA, openMP, MPI, pthreads, fork

Hardware: Hardware Design in Verilog, Mechatronics / Microcontrollers, Computer Architecture Design

Development: HTML5, CSS3, PHP, Postgres, MySQL, Sqlite3, React, Ruby on Rails, Wordpress, JS, Docker

Security: SQL Injection, Security headers, XSS, Content Security Policy, Click-jacking, SSL Certificates, Basic penetration testing, enumeration