

# Nate Tracy-Amoroso

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## Education

Northwestern University, Evanston, IL  
McCormick School of Engineering  
Bachelor of Science, Computer Science

Expected Graduation: May 2021  
Cumulative GPA: 3.7/4.0

## Relevant Work Experience

Web Team Developer, McCormick School of Engineering, NU, Evanston, IL January 2018 - Present

- Rebuilt a legacy application to assist professors in learning students' names using virtual "flashcards." Integrated the application with Canvas to provide a seamless experience for professors.
- 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 data generated as part of my own project 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). mofDB allows for easy search and download of materials and calculations using a JSON format developed by NIST and expanded for computational data.

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.

Freelance Web Developer 2016 - Present

- Services provided to clients include: web design/development, hosting on AWS, DNS management, automated backup, CDN setup, and ongoing security updates.

Technical Consultant, Volunteer, IMPACT Chicago, Chicago, IL 2016 - Present

- IMPACT Chicago is a not-for-profit organization providing self-defense for women and girls. Duties include: migrating email and systems to Google Office, rebuilding [impactchicago.com](http://impactchicago.com), and transferring domain.

Creator, [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

Development: HTML5 CSS3, PHP7, Postgres MySQL Sqlite3, React, Ruby on Rails, Wordpress, Javascript

Security: SQL Injection, Security headers, XSS, Content Security Policy, Click-jacking, SSL Certificates, Basic penetration testing, enumeration, CVE exploitation, and relevant tools

Design: Adobe Photoshop, Adobe Illustrator, Adobe Lightroom, Microsoft Office Suite