

Nate Tracy-Amoroso

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Work Experience

- Software Engineer (Bing Ads), Microsoft, Seattle, WA June 2021 – Now
- Lead creation of a new front end for simultaneous bulk editing of 1000s of multimedia ads in a cross platform Win/Mac app.
 - Mentored a new developer working on react hooks performance improvements. Lead to 50% performance gains on many of our P1 customers scenarios.
 - Created integration for the C++ Chromium Embedded Framework to allow mocking of network requests greatly reducing runtime (nearly 5x), reliability, and costs of our test pipelines.
 - Advised & assisted in designing a reliable IOS notification & telemetry delivery system.
 - Improved reliability of our ui test pipelines from 97% to >99% facilitating much faster PR checkins for the development team.
- Full Stack Engineering Intern, Uncountable Inc, San Francisco, CA June 2020 – September 2020
- Designed and optimized a re-usable React 2d graph component to select points with a lasso. Graphs routinely had 5000+ points making selection a non-trivial problem. Integrated component with existing graphs on the platform for easy data filtering when training ML models.
 - Speedup CI/CD pipeline by 300% cutting costs 75% through progressive linting & docker optimizations.
 - Built full text search in postgresql to support a chemicals library delivering search results in <10ms.
- Web Team Developer, McCormick School of Engineering, NU, Evanston, IL January 2018 – June 2020
- Build a Ruby on Rails system to track the faculty tenure process from start to finish.
 - Provisioned access for Northwestern staff using HR APIs resulting in a 100% speedup from the former manual process.
 - Prevented attacks like XSS and SQL Injection using content security policy, http headers.
- Engineering Intern, [Snurr Research Lab](http://SnurrResearchLab.com), NU, Evanston, IL 2018 - 2022
- Worked on large scale high throughput screening of metal organic frameworks to identify top candidates for gas separations like Xe/Kr, nitrogen adsorption, and hydrogen storage.
 - Built a chemical materials web database called mofDB, mof.tech.northwestern.edu in collaboration with NIST. To date about 6MM entries and used by about 70 researchers a month.
- Teaching Assistant, NU, Evanston, IL 2018 – 2019
- CS 354: Computer System Security: Overhauled all course projects from x86 to x64.
 - CS 214 Data Structures. Including: abstract data types, O notation, BSTs, hash tables, bloom filters.
 - CS 213 Intro. to Computer Systems. Including: virtual memory, x86-64 assembly, bit level ops, GDB
- Intern, [Orbit Media Studios](http://OrbitMediaStudios.com), Chicago, IL Summer 2017 and Winter 2018
- Secured wordpress installations by modernizing apache SSL configs & proper SSH key management.
- Creator, Herpetology.pro, educational responsive mobile first web application ([open source](#)) 2019 - Present
- Architected an AWS cloud platform to educate people about reptiles and amphibians. Using data from the herpmapper project: 16k species, 356k photos, and 45k regions. Around 100 monthly users

Technical Skills

Languages: Rust, C#, Python, Javascript/Typescript, C/C++, Ruby, SQL

Dev: React, React Hooks, Rails, Flask, Entity Framework, Docker, REST, Databases : Postgres, MySQL, Sqlite3

CI/CD: Bitbucket Pipelines, Github Actions, TravisCI, Azure DevOps

Special Interests: PL Implementation & Compiler Construction, Optimization/Benchmarking, Parsers

Education

Northwestern University, Evanston, IL

McCormick School of Engineering

Master of Science, Computer Science

Bachelors of Science, Computer Science

Graduated: July 2021

Cumulative GPA: 3.8/4.