

Nate Tracy-Amoroso

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I'm a developer with a passion for language implementation and performant code

Work Experience

Software Engineer II, Microsoft, Seattle, WA August 2023 – Now

Software Engineer I, Microsoft, Seattle, WA June 2021 – August 2023

- Lead creation of a feature for efficient bulk editing of 1000s of multimedia ads in a Win/Mac app.
- Cut duration of our teams pre-checkin test pipelines 50% with a work stealing distributed test system for significantly improved developer experience and faster PR merges.
- Mentored a new developer working on react hooks performance improvements. Lead to 50% performance gains on many of our P1 customers scenarios.
- Advised & assisted in building a reliable IOS notification & telemetry delivery system.
- 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.

Web Development Team, Northwestern University, Evanston, IL January 2018 – June 2020

- Collaborated with university stakeholders to prototype, build, and release a RBAC based document storage system to securely track the faculty tenure process from assistant to full professor.
- Provisioned access for users based on HR APIs, a 100% speedup from the former manual process.

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

- Designed and optimized a React 2d graph component to select points with a lasso. Required solving the “point in polygon” problem for thousands of points. 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 out full text search in postgresql to support a chemicals library delivering search results in <10ms.

Engineering Intern, [Snurr Research Lab](#), NU, Evanston, IL 2018 - 2020

- 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.

Intern, [Orbit Media Studios](#), 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, Sqlite

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

Special Interests: Programming Language Implementation & Compiler Construction, Optimization/Benchmarking, Parsers, Runtimes, and Developer Experience

Education

Northwestern University, McCormick School of Engineering, Evanston, IL

Master of Science, Computer Science

Cumulative GPA: 3.8/4.0

Bachelors of Science, Computer Science

Graduated: July 2021

Publications

MOFX-DB: An Online Database of Computational Adsorption Data for Nanoporous Materials J. Chem. Eng. Data 2023, 68, 2, 483–498 <https://pubs.acs.org/doi/10.1021/acs.jced.2c00583>