

Nicholas Nelson

SOFTWARE ENGINEER · HCI RESEARCHER

Portland, Oregon, United States of America

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Summary

Founding Software Engineer at Nomatic Software Consulting which operates in the software consulting and solutions implementation support for small and medium-sized business in the Pacific Northwest region of USA. Have led research and development software projects that have led to multiple award-winning publications at international academic conferences focused on software engineering disciplines. 13+ years of diverse software engineering experience with specialties in software architecture, infrastructure operation, frontend development, and human-computer interaction.

Love to contribute to open sources and tech communities by sharing knowledge and experience. Prefer simplicity and ergonomic environments, such as Linux and macOS. Always trying to customize to find the most optimal environment. Interested in devising a better problem-solving method for challenging tasks, and learning new technologies and tools.

Skills

Programming	TypeScript, Node.js, Python, Java/Kotlin, C/C++, Ruby, PHP, R, LaTeX
DevOps	Next.js, Webpack, Vite, Jest, Cypress, GitHub Actions, TravisCI, Jenkins, Playwright, Vagrant
Back-end	Chromium/Electron, Rails, MySQL, PostgreSQL, REST APIs
Front-end	Redux, React, HTML5, TailwindCSS, Bootstrap, LESS, CSS3
Languages	English, Spanish, German, Chinese (Mandarin)

Experience

Nomatic Software Consulting

Portland, Oregon, USA

Founder/Software Consultant

Jun. 2024 - Current

- Collaborate with customer stakeholders to develop comprehensive software solutions that meet current and future business needs.
- Deployed and configured Airtable cloud spreadsheet-database platform for managing customer inquiries, project pipelines, and invoicing for a local food innovation center that supports Oregon's \$5 billion agriculture industry with B2B food research and support.

Oregon State University

Corvallis, Oregon, USA

Graduate Research Assistant

Sep. 2015 - Jan. 2024

- Architect and lead developer of a visuospatial source-code editor for managing human context in digital environments (built with Electron, Vite, React, Redux, and TypeScript).
- Developed interactive visualizations of Git repositories for human-centric version control.
- Built fully automated CI/CD pipelines on TravisCI, GitHub Actions, and Conveyor for cross-platform builds, packaging, and testing.
- Implemented unit-testing and an E2E (end-to-end) testing infrastructure in Cypress and Jest.
- Conducted empirical research into developer perceptions of software merge conflict processes, difficulties, and tools. Results received Best Paper Award at ICSME 2017.
- Conducted research into developer perceptions of CI practices and pitfalls. Results received Best Paper Award at ESEC/FSE 2017 and has 250+ citations.

Oregon State University

Corvallis, Oregon, USA

Undergraduate Research Assistant

Mar. 2014 - Sep. 2015

- Conducted research on static analysis of Java/Kotlin code for automated refactoring of Android apps to inject dynamic permissions handling code that complies with Android 6.0's run-time permissions model.
- Developed a Ruby on Rails web application for visualizing developer adherence to the TDD (Test-Driven Development) process.

Microsoft Corp.

Seattle, Washington, USA

Graduate Research Intern, PROSE

Jun. 2019 - Sep. 2019

- Developed an interactive grid component plugin for JupyterLab interactive notebooks using Python, TypeScript, and CSS.
- Combined PBE (programming-by-example) and static type-inferencing techniques to create data analysis and formatting pipeline.
- Conducted qualitative HCI research into cognitive processes of recognizing ambient data in grid components.

Hewlett Packard Enterprise

Corvallis, Oregon, USA

Software Engineering Intern

Jun. 2013 - Sep. 2013

- Designed, proposed, and implemented warranty claims processing sub-system using Python and PHP to integrate into HP Web Press Dashboard web application.
- Implemented RESTful API service for ingesting printer consumables telemetry data from Inkjet High-Speed Product Solutions (IHPS) industrial printers for warranty claim validation.

Samaritan Health Services

Corvallis, Oregon, USA

Systems Analyst I

Apr. 2010 - Dec. 2012

- Provided technical support for 85 enterprise software applications deployed at various regional healthcare facilities including Schlage Industrial Lock Control, MySQL, PostgreSQL, and Polycom Teleconference Systems.
- Held primary application support role for 30 enterprise applications, including 24/7 support during on-call rotations.

Samaritan Health Services

Corvallis, Oregon, USA

Help Desk Analyst

Jul. 2008 - Apr. 2010

- Provided remote technical support for 7,000 healthcare employees at various regional healthcare facilities.
- Maintained a 99% yearly customer satisfaction rating for two consecutive years.

Intel Corp.

Hillsboro, Oregon, USA

Engineering Support Contractor

May. 2007 - Jul. 2008

- Developed a server deployment telemetry and provisioning application for enterprise-scale Linux/UNIX clusters using PHP and ColdFusion.
- Maintained operational and software security for 700 co-located Linux/UNIX servers across 5 global regions.
- Supported 6,000 production and test Linux/UNIX servers in use by electrical engineers and software developers.
- Developed SQL queries for automated weekly and monthly report generation of Linux/UNIX server cluster health analytics.

Education

Oregon State University

Corvallis, Oregon, USA

Ph.D. in Computer Science

Sep. 2015 - Jan. 2024

- Cumulative GPA: 3.57 / 4.00
- Dissertation: *Supporting Merge Comprehension when Resolving Merge Conflicts*
- Related Coursework: *Data-Driven Software Engineering, Software Engineering Methods, Field Studies in SE & HCI, Static Analysis & Model Checking in SE, Programming Languages I & II, Sensemaking in Software Development*
- Received Honorable Mention for Graduate Teaching 2018-2019.

Oregon State University

Corvallis, Oregon, USA

B.S. in Computer Science

Jan. 2012 - Jun. 2015

- Cumulative GPA: 3.35 / 4.00
- Minor: *Business and Entrepreneurship*
- Senior Project: *Clang AST Analysis and Repair: A Code Quality and Compliance Development Tool*
- Earned Honor Roll (GPA 3.5+) for four consecutive terms.

Portland Community College

Portland, Oregon, USA

A.S. in Computer Information Systems

Sep. 2007 - Dec. 2008

- Cumulative GPA: 3.34 / 4.00
- Received President's Award (GPA 3.8+) and Dean's Award (GPA 3.5+) for three consecutive terms.