Nicholas **Nelson**

SOFTWARE ENGINEER · HCI RESEARCHER

Portland, Oregon, United States of AMERICA

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Summary

Current PhD candidate in Computer Science at Oregon State University, researching novel user interfaces for version control tools and software development environments. 6+ years experience specializing in front-end development, infrastructure automation, and technical support. Interested in software developer roles that can leverage my expertise in Git, CI/CD, and program analysis/transformation.

Skills

Programming	TypeScript, Node.js, Python, Java/Kotlin, C/C++, Ruby, PHP, R, LaTeX
DevOps	Webpack, Jest, Cypress, GitHub Actions, TravisCI, Jenkins, Vagrant
Back-end	Chromium/Electron, Rails, MySQL, PostgreSQL, REST API
Front-end	Redux, React, HTML5, Bootstrap, LESS, CSS
Languages	English, Spanish, German

Work Experience

Oregon State University *Corvallis, Oregon, USA*

GRADUATE RESEARCH ASSISTANT, SOFTWARE ENGINEERING *Sept. 2015 - Current*

- Architect and lead developer of a context-oriented source-code editor utilizing Electron, Webpack, React, Redux, and TypeScript.
- Developed interactive visualizations of Git repositories for human-centric version control.
- Built fully automated CI/CD pipelines on TravisCI (later migrated to GitHub Actions) for cross-platform builds, packaging, and testing.
- Implemented an E2E (end-to-end) and unit-testing infrastructure in Cypress and Jest.
- Conducted empirical research into developer perceptions of software merge conflict processes, difficulties, and tools.
- Conducted empirical research into developer perceptions of CI (Continuous Integration) practices and tools.
- Reviewed submitted manuscripts for prominent software engineering conferences and journals.

UNDERGRADUATE RESEARCH ASSISTANT, SOFTWARE ENGINEERING *Mar. 2014 - Sept. 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*

RESEARCH INTERN, PROGRAM SYNTHESIS *Jun. 2019 - Sept. 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 (human-computer interactions) research into the cognitive processes of recognizing ambient data in grid components.

Hewlett Packard Enterprise *Corvallis, Oregon, USA*

SOFTWARE ENGINEERING INTERN *Jun. 2013 - Sept. 2013*

- Designed, proposed, and implemented warranty claims processing sub-system using Python and PHP which was integrated into the 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 claims 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 System.
- Held primary application support role for 30 enterprise applications, including 24/7 support during on-call rotations.

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 3 consecutive years.

Intel Corp. *Hillsboro, Oregon, USA*

Contract Engineering Support Specialist *May 2007 - Jul. 2008*

- Developed a server rack polling and provisioning application for enterprise-scale rack management 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 health analytics.

Education

Oregon State University *Corvallis, Oregon, USA*

Ph.D. in Computer Science *Sep. 2015 - Jun. 2023*

- Received Honorable Mention Award for 2018-2019 graduate students providing teaching services in EECS Dept.

Oregon State University *Corvallis, Oregon, USA*

B.S. in Computer Science *Jan. 2012 - Aug. 2015*

- Earned Honor Roll designation for Spring 2014, Fall 2014, Winter 2014, and Winter 2015 terms for GPA 3.5+

Portland Community College *Portland, Oregon, USA*

A.S. in Computer Information Systems *Sep. 2007 - Dec. 2008*

- Earned President's List designation for Spring 2008 term for GPA 3.8+
- Earned Dean's List designation for Fall 2007, Winter 2007, and Winter 2008 terms for GPA 3.5+

Honors & Awards

2020	**ACM SIGSOFT Distinguished Paper Award**, 42nd International Conference on Software Engineering (ICSE 2020)	*Seoul, S. Korea*
2019	**ACM SIGSOFT CAPS Travel Support Award**, 41st International Conference on Software Engineering (ICSE 2019)	*Montréal, QC, Canada*
2017	**IEEE TCSE Distinguished Paper Award**, 33rd International Conference on Software Maintenance and Evolution (ICSME 2017)	*Shanghai, China*
2017	**ACM SIGSOFT Distinguished Paper Award**, 11th Joint Meeting on Foundations of Software Engineering (ESEC/FSE 2017)	*Paderborn, Germany*