

Nicholas NELSON

PhD Student, Computer Science | Software Developer

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2500 NW Monroe Avenue, Corvallis, Oregon 97331, USA



PhD student in Computer Science focusing on software engineering (SE), human-computer interaction (HCI), user interfaces, and developer tools. I am exploring the effects of human problem-solving processes on the use of integrated development environments (IDEs). I also conduct research into software development processes such as merge conflicts, continuous integration (CI), and test-driven development (TDD). I have experience using TypeScript, Java, CSS, C/C++, SQL, Python, PHP, JSON, and R.

EDUCATION

- | | |
|--------------|---|
| 2015–Current | Ph.D in Computer Science at Oregon State University (Advisor: Anita Sarma) |
| 2015 | B.S. in Computer Science at Oregon State University (Minor: Business & Entrepreneurship) |
| 2008 | A.S. in Computer Information Systems at Portland Community College |
| 2008 | A.S. in General Studies at Portland Community College |
| 2003 | H.S. Diploma at South Albany High School |

EMPLOYMENT

- | | |
|--|---|
| Present
September 2015 | Graduate Research & Teaching Assistant, OREGON STATE UNIVERSITY, USA <ul style="list-style-type: none">Developed architecture and platform for a highly-configurable context-oriented IDE.Conducted empirical research into cognitive processes of problem-solving and context management during software development.Conducted research into developer perceptions of software merge conflict processes and tools.Developed IntelliJ Idea plugin to analyze and refactor Android Java code written for API 6/7 security to use API 8 runtime permissions.Assisted with research into developer perceptions of Continuous Integration (CI) practices and tools.Reviewed submitted manuscripts for prominent software engineering conferences. <div>Typescript Javascrpt jQuery CSS NodeJS Atom LaTeX IntelliJ Idea Git Maven Gradle Groovy</div> <div>Android Studio Android 8 API TravisCI Jenkins JSON R RStudio Haskell Idris Prolog</div> |
| September 2015
March 2014 | Undergraduate Research Assistant, OREGON STATE UNIVERSITY, USA <ul style="list-style-type: none">Member of Change-Oriented Programming Environment (COPE) research group.Assisted with research into predictive code analysis and visualization of Test-Driven Development (TDD) developer processes. <div>Java IntelliJ Idea Git Maven LaTeX Eclipse R RStudio Ninja Framework Ruby Python XML</div> |
| March 2014
September 2013 | Undergraduate Teaching Assistant, OREGON STATE UNIVERSITY, USA <ul style="list-style-type: none">Instructed recitation labs for 30–40 freshman and sophomore computer science students enrolled in Computer Science Orientation (CS160), Introduction to Computer Science I (CS161), and Introduction to Computer Science II (CS162) courses.Developed training and evaluation material for new teaching assistants. <div>Python Java C/C++ PyCharm IntelliJ Idea</div> |
| September 2013
June 2013 | Process Engineering Intern, HEWLETT PACKARD ENTERPRISE, USA <ul style="list-style-type: none">Member of PPS - Inkjet High-Speed Production Solutions (IHPS) division.Designed, proposed, and implemented warranty processing and validation code for HP Web Press consumable products.Integrated file code with HP Web Press Dashboard web applications. <div>Python PHP Perl Bash</div> |
| December 2012
April 2010 | System Analyst I, SAMARITAN HEALTH SERVICES, USA <ul style="list-style-type: none">Member of Information Services (IS) division.Provided technical support, evaluation, deployment, maintenance, project management, and sunset strategizing for 85 enterprise software applications.Maintained primary application support for 30 enterprise applications, including 24/7 support during on-call rotations. <div>Oracle SQL MySQL PostgreSQL Microsoft Windows Server Bomgar Remote Access Schlage Lock Control Software</div> <div>ViewPAK Boiler System Microsoft SharePoint Microsoft Active Directory</div> |

April 2010
July 2008

Help Desk Analyst, SAMARITAN HEALTH SERVICES, USA

- Member of Information Services (IS) division.
- Provided technical support for 7,000 healthcare employees.
- Maintained a 99% yearly customer satisfaction rating.
- Answered 13,000 phone calls and 7,000 support emails per year.

BMC Remedy Service Management Polycom Teleconference LogMeIn Remote Control

July 2008
October 2007

UNIX Server Operations Intern, INTEL CORPORATION, USA

- Developed interactive web applications for server systems rack polling and management.
- Supported 6,000 production and test UNIX/Linux servers in active use by engineers and developers.
- Maintained operational security for 700 highly secure hardened UNIX/Linux servers co-located in secure global facilities.

ColdFusion PHP Java Python Perl

October 2007
May 2007

Engineering Computing Support Intern, INTEL CORPORATION, USA

- Provided technical support for 19,000 Engineering and Product Development employees.
- Supported 160+ enterprise software products across 14 different global sites.
- Developed SQL queries and reports for weekly and monthly support statistics.

BMC Remedy Service Management TrueWindow Remote Access Control Microsoft Active Directory

PEER-REVIEWED PUBLICATIONS

* co-first author.

- [6] Souti Chattopadhyay, **Nicholas Nelson**, Thien Nam, McKenzie Calvert, and Anita Sarma. *Context in Programming: An Investigation of How Programmers Create Context*. Proceedings of the IEEE ICSE Workshop on Cooperative and Human Aspects of Software Engineering (CHASE'18), May 2018.
- [5] Shane McKee*, **Nicholas Nelson***, Anita Sarma, and Danny Dig. *Software Practitioner Perspectives on Merge Conflicts and Resolutions*. Proceedings of IEEE International Conference on Software Maintenance and Evolution (ICSME'17), Sep 2017. Acceptance ratio: 27.8% (42/151). 🏆 **IEEE TCSE Distinguished Paper Award**.
- [4] Michael Hilton, **Nicholas Nelson**, Timothy Tunnell, Darko Marinov, and Danny Dig. *Trade-offs in Continuous Integration: Assurance, Security, and Flexibility*. Proceedings of ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE'17), Sep 2017. Acceptance ratio: 24.4% (72/295). 🏆 **ACM SIGSOFT Distinguished Paper Award**.
- [3] **Nicholas Nelson**, Anita Sarma, and André van der Hoek. *Towards an IDE to Support Programming as Problem-Solving*. Proceedings of the Psychology of Programming Interest Group Workshop (PPIG'17), Jul 2017. Acceptance ratio: 84.0% (21/25).
- [2] **Nicholas Nelson**. *Problem-Solving Applications in Developer Environments*. pages 179–180. Proceedings of the Psychology of Programming Interest Group Workshop (PPIG'17), Jul 2017. Acceptance ratio: 90.0% (9/10).
- [1] Michael Hilton, **Nicholas Nelson**, Hugh McDonald, Sean McDonald, Ron Metoyer, and Danny Dig. *TDDViz: Using Software Changes to Understand Conformance to Test Driven Development*. pages 53–65. Proceedings of the International Conference on Agile Processes, in Software Engineering, and Extreme Programming (XP'16), May 2016. Acceptance ratio: 33.3% (14/42).

LANGUAGES

English	●	●	●	●	●
Spanish	●	●	●	○	○
German	●	●	○	○	○
Mandarin	●	○	○	○	○
Japanese	●	○	○	○	○

AWARDS

- IEEE TCSE Distinguished Paper Award at ICSME'17
- ACM SIGSOFT Distinguished Paper Award at FSE'17
- Honor Roll at OSU for Winter'15, Fall'14, Winter'14, Spring'14
- President's List at PCC for Spring'08
- Dean's List at PCC for Winter'08, Fall'07, Winter'07

SERVICE

2018 **Reviewer, 33RD IEEE/ACM INTERNATIONAL CONFERENCE ON AUTOMATED SOFTWARE ENGINEERING (ASE)**
Montpellier, France



2016–2018	Steward, COALITION OF GRADUATE EMPLOYEES LOCAL 6069 (AFT, AFL–CIO), USA > Graduate employee representative for Electrical Engineering and Computer Science (EECS).
2017	Video Game Workshop Lead, CHICKTECH CORVALLIS, USA > Developed instructional material for 2017 ChickTech Corvallis Annual Summer Kickoff Event for 200–300 high school girls interested in science and technology. Reviewer, 32ND IEEE/ACM INTERNATIONAL CONFERENCE ON AUTOMATED SOFTWARE ENGINEERING (ASE) Urbana-Champaign, Illinois, USA Reviewer, 30TH ACM SYMPOSIUM ON USER INTERFACE SOFTWARE AND TECHNOLOGY (UIST) Quebec City, Canada Reviewer, 14TH INTERNATIONAL CONFERENCE ON MINING SOFTWARE REPOSITORIES (MSR) Buenos Aires, Argentina
2015	Reviewer, 30TH IEEE/ACM INTERNATIONAL CONFERENCE ON AUTOMATED SOFTWARE ENGINEERING (ASE) Lincoln, Nebraska, USA

REFERENCES

Dr. Anita Sarma

Associate Professor, Computer Science



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Dr. Michael Hilton

Assistant Teaching Professor, Institute for Software Research



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Dr. André van der Hoek

Professor & Department Chair, Informatics



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Dr. Danny Dig

Associate Professor, Computer Science

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