

DWAYNE CHRISTIAN BROWN, JR. (“CHRIS”)
DOCTORAL CANDIDATE | COMPUTER SCIENCE | NORTH CAROLINA STATE UNIVERSITY

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EDUCATION

North Carolina State University August 2015 - present
Ph.D. in Computer Science
Dissertation: *Digital Nudges for Encouraging Developer Actions*
Advisor: Chris Parnin

North Carolina State University August 2015 - May 2017
M.S. in Computer Science

Duke University Class of 2013
B.S. in Computer Science, with Distinction
Minor in African and African American Studies

PUBLICATIONS

Conference Papers

Mining Specifications from Documentation Using a Crowd SANER 2019
Peng Sun, *Chris Brown*, Ivan Beschastnikh, Kathryn T. Stolee
· International Conference on Software Analysis, Evolution and Reengineering
Hangzhou, China

How Software Users Recommend Tools to Each Other VL/HCC 2017
Chris Brown, Emerson Murphy-Hill, Justin Middleton, Esha Sharma
· Visual Languages and Human-Centric Computing
Raleigh, NC

Flower: Navigating Program Flow in the IDE VL/HCC 2017
Justin Smith, *Chris Brown*, Emerson Murphy-Hill
· Visual Languages and Human-Centric Computing
Raleigh, NC

Weaving Computing into all Middle School Disciplines ITiCSE 2014
Susan H. Rodger, *Dwayne Brown*, Michael Hoyle, Daniel MacDonald, Michael Marion, Elizabeth Onstwedder, Bella Onwumbiko, Edwin Ward
· Innovation and Technology in Computer Science Education
Uppsala, Sweden

Workshops

Sorry to Bother You: Designing Bots for Effective Recommendations (paper) BotSE 2019
Chris Brown, Chris Parnin
· International Workshop on Bots in Software Engineering in conjunction with ICSE 2019
Montreal, QC, Canada

Experimenting with and Integrating Alice 2.3 into many disciplines (demo) SIGCSE 2013
Susan H. Rodger, Steve Cooper, Wanda Dann, *Dwayne C. Brown, Jr.*, Jacobo Carrasquel
· ACM Special Interest Group on Computer Science Education
Denver, CO

Doctoral Symposium

Digital Nudges for Encouraging Developer Actions ICSE 2019
Chris Brown, Chris Parnin
· International Conference on Software Engineering
Montreal, QC, Canada

Posters

Integrating Computer Science into Middle School Mathematics SIGCSE 2013
Susan H. Rodger, *Dwayne C. Brown, Jr.*, Michael Hoyle, Michael Marion
· ACM Special Interest Group on Computer Science Education
Denver, CO

RESEARCH

Research Assistant

Fall 2018 - present

North Carolina State University

Raleigh, NC

- Created the *naive telemarketer design* as a baseline approach to examine automated recommendations to software developers
- Implemented and evaluated the *naive telemarketer design* in *tool-recommender-bot* to generate automated pull requests recommending static analysis tools to Maven projects
- Found this approach ineffective due to a poor social context and integration in developer workflows
- Published and presented this work at a peer-reviewed research workshop (BotSE 2019)
- Mined GitHub repositories, surveyed users, and designed a user study to explore the impact of GitHub suggested changes on recommendations between developers (ICSE 2020, *in submission*)
- Categorizing regular expression errors and fixes in GitHub pull requests
- Developing and planning evaluation for *nudge-bot* to determining the impact of digital nudges on improving adoption of useful developer behaviors

Research Assistant

Fall 2017 - Spring 2018

North Carolina State University

Raleigh, NC

- Investigated implementing a new tool recommendation approach commending developers for bug fixes, apprehending locations of similar errors, and recommending tools to help find and fix bugs
- Researched using crowd-sourcing to improve automatically generated Java API documentation (SANER 2019)

Research Assistant

Fall 2016 - Spring 2017

North Carolina State University

Raleigh, NC

- Developed and evaluated an Eclipse plugin in Java to improve code navigation in the IDE called *Flower* (VL/HCC 2017)
- Conducted a user study to determine effective characteristics of peer interactions for tool recommendations and discovered user receptiveness is the only significant attribute
- Published and presented this work at a peer-reviewed research conference (VL/HCC 2017)

Independent Study

Fall 2016

North Carolina State University

Raleigh, NC

- Designed an algorithm using automated program repair concepts to grade introductory programming assignments

Computer Science Undergraduate Research Fellow

Summer 2012 - Spring 2013

Duke University

Durham, NC

- Researched integrating computer science into middle school education with Alice
- Mapped Common Core K-12 standards to CSTA computer science education standards
- Created tutorials for students and teachers to create Alice worlds based on educational concepts
- Taught Alice programming and tutorials to K-12 teachers at summer workshops as well as middle school students during activity days
- Wrote senior honor's thesis "*Integrating Computer Science Into Middle School Mathematics*"
- Published a paper (ITiCSE 2014), poster (SIGCSE 2013), and participated in a workshop demo (SIGCSE 2013) at peer-reviewed research conferences

Distributed Research Experience for Undergraduates (DREU)

Summer 2011

Brown University

Providence, RI - Moss Beach, CA

- Investigated applications for robotics in society using ROS, Python, drones, and iRobot Create robots
- Developed *SwagBot*, a remote controlled telepresence robot to help disabled users retrieve items

INDUSTRY

Red Hat

Summer 2018

Quality Engineering Intern

Raleigh, NC

- Verified bugs and automated tests with Python for the robottelo test suite for Red Hat Satellite 6
- Explored Federal Information Processing Standards (FIPS) compatibility for Satellite 6
- Created Ansible roles to automatically test and install Red Hat Satellite

- Red Hat** Summer 2017
Quality Engineering Intern Raleigh, NC
- Verified bugs and automated tests with Python for the robottelo test suite for Red Hat Satellite 6
 - Implemented satellite-populate modules to configure and run robottelo tests with Docker using YAML files (2017)
- Blackbaud** Summer 2016
Software Quality Engineer Intern Charleston, SC
- Fixed C# bugs and verified test cases for Online Express and Sky Email
 - Improved Givalanche API Documentation with Swagger and the Blackbaud Stache framework
 - Constructed a dashboard to monitor the status of Online Express using AppDynamics
- Bank of America** July 2013 - July 2015
Python Developer Charlotte, NC
- Developed, tested, and maintained Python code for the Manual Adjustment Tool application used internally at Bank of America

TEACHING

- Teaching and Communication Certificate** September 2019 - present
North Carolina State University Raleigh, NC
- Enrolled in the graduate certificate program requiring 100 hours of approved workshops and activities
- Python Instructor** June - August 2019
The Coding School Virtual
- Tutored a high school student through the codeConnects teaching and mentorship summer program for underrepresented minorities in STEM
- Java Tutor** August - December 2017
NC State CSC116: Introduction to Programming Java Raleigh, NC
- Tutored students in the Introduction to Computing Java course through NC State Students and Technology in Academia, Research and Service (STARS)
- Java Tutor** August - December 2016
AP Computer Science Raleigh, NC
- Tutored a local high school student enrolled in AP Computer Science
- Teaching Assistant** January - May 2016
NC State CSC216: Java Programming Concepts Raleigh, NC
- Graded projects and exams, held office hours, and used Jenkins to manage student Java programming assignments
- Teaching Assistant** August - December 2015
NC State CSC326: Software Engineering Raleigh, NC
- Graded assignments and exams, held office hours, taught lab sections, and used Jenkins to manage Java programming assignments
- C++ Tutor** January - May 2015
Central Piedmont Community College Charlotte, NC
- Tutored a student taking an introductory programming class at Central Piedmont Community College
- Alice Activity Day** March 23, 2013
Duke CSURF Durham, NC
- Taught Alice programming to local 6th grade students in two 3-hour sessions to collect data for research thesis
- Creating a 3D Interactive Story** February 22, 2013
Duke FEMMES Durham, NC
- Taught Alice programming to 4th-6th grade girls for Females Excelling More in Math, Engineering, and Science (FEMMES) event

Adventures in Alice November 30, 2012
Oak Grove Middle School Winston-Salem, NC
· Taught Alice programming using created tutorials to three 6th grade math and science classes

Adventures in Alice Programming Workshops June 18-29 and July 9-13, 2012
Duke University Durham, NC
· Taught Alice programming at a two-week workshop and a 1-week workshop for K-12 teachers
· Presented methods and tutorials to integrate beginner computer science concepts with Alice into K-12 curriculum

PRESENTATIONS

DevConf.US August 15-17, 2019
“Sorry to Bother You! Effective OSS Recommendations” Boston, MA
· Accepted talk presented at DevConf.US 2019 OSS developer community and technology conference

Free Open Source Software Interest Group January 25, 2019
Lightning Talk Raleigh, NC
· Presented my research as a lightning talk for the FOSS Interest Group meeting at NC State

Red Hat QECampX October 10, 2018
“How to Improve Software Tool Discovery and Usage” Raleigh, NC
· Accepted talk presented at the Red Hat QECampX quality engineering conference

Linux User’s Group @ NC State February 28, 2018
Lightning Talk Raleigh, NC
· Presented my research as a lightning talk for the Linux User’s Group

Intern Expo August 2017, 2018
Red Hat Raleigh, NC
· Showcase and demo internship projects to Red Hat employees

Laboratory for Analytic Sciences November 29, 2017
Wednesday Research Meeting Raleigh, NC
· Invited talk to present my research at the Laboratory for Analytic Sciences’ weekly research meeting

Intern Showcase August 2016
Blackbaud Raleigh, NC
· Present the work completed during my internship to Blackbaud interns and employees

OTHER CONFERENCES

All Things Open Opensource.com Raleigh, NC October 2016, 2017, 2018, 2019
URMD Grad Cohort Workshop CRA Waikoloa Village, HI March 21-23, 2019
Foundations of Software Engineering ACM Lake Buena Vista, FL November 5-9, 2018
National Society of Blacks in Computing NSBC New Orleans, LA August 9-11, 2018
Open Source 101 Opensource.com Raleigh, NC February 2017, 2018
National Society of Blacks in Computing NSBC Atlanta, GA June 1-3, 2017
Foundations of Software Engineering ACM Seattle, WA November 14-18, 2016
LeaderShape Duke University Sophia, NC August 2012

TECHNICAL SKILLS AND ORGANIZATIONS

Red Hat Enterprise Linux 7 Certified System Administrator
Organizations: ACM, IEEE, Python Software Foundation, Linux Foundation, Minority Engineering Graduate Student Association (MEGSA), Free Open Source Software Interest Group (FOSS), Red Hat BUILD (Blacks United in Leadership and Diversity)
Hackathons: Hacktoberfest 2019, PackHacks 2018, Open Jam 2017, Duke Men’s Basketball Hackathon, HackNC 2016, HackDuke 2016, Off the Grid 2016 (Blackbaud)
Programming Languages: Python, Java, R, Ruby, C#, C++, C, HTML, JavaScript, SQL
Tools and Technologies: Git, Ansible, Jenkins, Docker, TravisCI, Maven, Linux, Windows, LaTeX, Android

SERVICE

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| HackDuke: Code for Good | Volunteer <i>Durham, NC</i> | November 2-3, 2019 |
| All Things Open | Volunteer <i>Raleigh, NC</i> | October 2016, 2017, 2018, 2019 |
| NC State CSC PhD Recruitment Weekend | Volunteer <i>Raleigh, NC</i> | March 1-2, 2019 |
| Bridge to the Doctorate Program | Graduate Student Panelist <i>Raleigh, NC</i> | February 15, 2019 |
| Open Source 101 | Volunteer <i>Raleigh, NC</i> | February 2017, 2018 |
| NC-LSAMP¹ | Undergraduate Research Conference Panelist <i>Raleigh, NC</i> | November 11, 2017 |
| VL/HCC | Conference Student Volunteer <i>Raleigh, NC</i> | October 10-13, 2017 |
| Red Hat Diversity and Inclusion Week | “Why Diversity Matters” <i>Raleigh, NC</i> | July 2017 |
| Big Brothers Big Sisters | Big Brother (Mentor) <i>Charlotte, NC</i> | October 2014 - July 2015 |
| SIGCSE 2012 | Student Volunteer <i>Raleigh, NC</i> | February 29 - March 3, 2012 |
| ACM Mid-Atlantic Region Programming Contest | Volunteer <i>Durham, NC</i> | November 5, 2011 |

HONORS AND AWARDS

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| DevConf.US Diversity Travel Scholarship | Red Hat <i>Boston, MA</i> | June 25, 2019 |
| SIGSOFT CAPS NSF Travel Award | NSF (<i>ICSE 2019</i>) <i>Montreal, QC, Canada</i> | March 27, 2019 |
| Graduate Merit Award | North Carolina State University <i>Raleigh, NC</i> | August 2015 |
| Goldman Sachs Research Scholar | Goldman Sachs <i>Durham, NC</i> | Summer 2012 |
| Undergraduate Research Fellowship | Duke University <i>Durham, NC</i> | May 2012 - May 2013 |
| Computing Research Association DREU | Brown University <i>Providence, RI</i> | Summer 2011 |

¹North Carolina Louis Stokes Alliance for Minority Participation