

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

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EDUCATION

North Carolina State University <i>Ph.D.</i> in Computer Science Dissertation: <i>Digital Nudges for Encouraging Developer Actions</i> Advisor: Chris Parnin	August 2015 - present
North Carolina State University <i>Graduate Certificate</i> in Teaching and Communication The Graduate School Professional Development	September 2019 - present
North Carolina State University <i>M.S.</i> in Computer Science	August 2015 - May 2017
Duke University <i>B.S.</i> in Computer Science, with Distinction Minor in African and African American Studies	Class of 2013

PUBLICATIONS

Conference Papers

- Understanding the Impact of GitHub Suggested Changes on Recommendations Between Developers*
Chris Brown, Chris Parnin *ESEC/FSE 2020*
· ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering
- An Empirical Study on Regular Expression Bugs*
Peipei Wang, **Chris Brown**, Jamie A. Jennings, Kathryn T. Stolee *MSR 2020*
· ACM International Conference on Mining Software Repositories
- Mining Specifications from Documentation Using a Crowd*
Peng Sun, **Chris Brown**, Ivan Beschastnikh, Kathryn T. Stolee *SANER 2019*
· IEEE International Conference on Software Analysis, Evolution and Reengineering
- How Software Users Recommend Tools to Each Other*
Chris Brown, Emerson Murphy-Hill, Justin Middleton, Esha Sharma *VL/HCC 2017*
· IEEE Symposium on Visual Languages and Human-Centric Computing
- Flower: Navigating Program Flow in the IDE*
Justin Smith, **Chris Brown**, Emerson Murphy-Hill *VL/HCC 2017*
· IEEE Symposium on Visual Languages and Human-Centric Computing
- Weaving Computing into all Middle School Disciplines*
Susan H. Rodger, **Dwayne Brown**, Michael Hoyle, Daniel MacDonald, Michael Marion, Elizabeth Onstwedder, Bella Onwumbiko, Edwin Ward *ITiCSE 2014*
· ACM Innovation and Technology in Computer Science Education

Workshops

- Comparing Different Developer Behavior Recommendation Styles*
Chris Brown, Chris Parnin *CHASE 2020*
· ACM International Workshop on Cooperative and Human Aspects of Software Engineering, in conjunction with ICSE

Sorry to Bother You Again: Developer Recommendation Choice Architectures for Designing Effective Bots

Chris Brown, Chris Parnin

BotSE 2020

· ACM International Workshop on Bots in Software Engineering in conjunction with ICSE

Sorry to Bother You: Designing Bots for Effective Recommendations

Chris Brown, Chris Parnin

BotSE 2019

· IEEE International Workshop on Bots in Software Engineering in conjunction with ICSE

Experimenting with and Integrating Alice 2.3 into many disciplines (abstract only)

Susan H. Rodger, Steve Cooper, Wanda Dann, **Dwayne C. Brown, Jr.**, Jacobo Carrasquel

SIGCSE 2013

· ACM Special Interest Group on Computer Science Education Technical Symposium

Doctoral Symposium

Digital Nudges for Encouraging Developer Actions

Chris Brown, Chris Parnin

ICSE 2019

· IEEE International Conference on Software Engineering

Poster

Integrating Computer Science into Middle School Mathematics

Susan H. Rodger, **Dwayne C. Brown, Jr.**, Michael Hoyle, Michael Marion

SIGCSE 2013

· ACM Special Interest Group on Computer Science Education Technical Symposium

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

RESEARCH

Research Assistant

Fall 2018 - present

North Carolina State University

Raleigh, NC

- Implemented and evaluated the *naive telemarketer design* baseline developer recommendation approach in *tool-recommender-bot* to generate automated pull requests recommending static analysis tools to Maven projects

- Mined GitHub repositories, surveyed users, and designed a user study to explore the impact of GitHub suggested changes on recommendations between developers
- 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

Research Assistant

Fall 2016 - Spring 2017

North Carolina State University

Raleigh, NC

- Developed and evaluated Eclipse plugin to improve code navigation for developers called *Flower*
- 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

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, poster, and participated in a workshop demo

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

TEACHING

Instructor

May - July 2020

North Carolina State University

* *Virtual due to COVID-19*

- Instructor of record for CSC116 (*Introduction to Computing - Java*) for Summer 2020

Guest Lecture Presentation

March 2, 2020

North Carolina State University

Raleigh, NC

- "Team Project Bot" lecture presentation and *class-bot* demo for CSC326 (*Software Engineering*)

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

North Carolina State University

Raleigh, NC

- Tutored CSC116 (*Introduction to Computing - Java*) students 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
North Carolina State University Raleigh, NC
 · Graded projects and exams, held office hours, and used Jenkins to manage student Java programming assignments for CSC216 (*Java Programming Concepts*)
- Teaching Assistant** August - December 2015
North Carolina State University Raleigh, NC
 · Graded assignments and exams, held office hours, taught lab sections, and used Jenkins to manage Java programming assignments for CSC326 (*Software Engineering*)
- 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 University Durham, NC
 · Taught Alice programming to local 6th grade students in two 3-hour sessions to collect data for research thesis through the Duke Computer Science Undergraduate Research Fellowship (CSURF) program
- Creating a 3D Interactive Story** February 22, 2013
Duke University 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 to K-12 teachers to integrate beginner computer science concepts into K-12 curriculum

SERVICE

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| NC State CSC PhD Recruitment Weekend | Coordinator | <i>Raleigh, NC</i> | February 28-29, 2020 |
| 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> | Spring 2018, 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, Blocks and Beyond Workshop | 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 |

PRESENTATIONS AND INVITED TALKS

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| North Carolina State University Three Minute Thesis | September 24, 2020 |
| “Digital Nudges for Encouraging Developer Behaviors” | <i>Virtual</i> |
| · Participated in the NC State Graduate School Three Minute Thesis (3MT) competition | |

¹North Carolina Louis Stokes Alliance for Minority Participation

DevConf.US “Sorry to Bother You! Effective OSS Recommendations” · Accepted talk presented at DevConf.US 2019 OSS developer community and technology conference	August 15-17, 2019 Boston, MA
Free Open Source Software Interest Group <i>Lightning Talk</i> · Presented my research as a lightning talk for the FOSS Interest Group meeting at NC State	January 25, 2019 Raleigh, NC
Red Hat QECampX “How to Improve Software Tool Discovery and Usage” · Accepted talk presented at the Red Hat QECampX quality engineering conference	October 10, 2018 Raleigh, NC
Linux User’s Group @ NC State <i>Lightning Talk</i> · Presented my research as a lightning talk for the Linux User’s Group	February 28, 2018 Raleigh, NC
Intern Expo <i>Red Hat</i> · Showcase and demo internship projects to Red Hat employees	August 2017, 2018 Raleigh, NC
Laboratory for Analytic Sciences <i>Wednesday Research Meeting</i> · Invited talk to present my research at the Laboratory for Analytic Sciences’ weekly research meeting	November 29, 2017 Raleigh, NC
Intern Showcase <i>Blackbaud</i> · Present the work completed during my internship to Blackbaud interns and employees	August 2016 Raleigh, NC

OTHER CONFERENCES

NC State Academic Packways * <i>Virtual due to COVID-19</i>	June 4-5, 2020
NC State Virtual Writing Retreat * <i>Virtual due to COVID-19</i>	May 4-8, 2020
Open Source 101 at Home * <i>Virtual due to COVID-19</i>	May 12, 2020
All Things Open Red Hat <i>Raleigh, NC</i>	October 2016, 2017, 2018, 2019
URMD Grad Cohort Workshop CRA <i>Waikoloa Village, HI</i>	March 21-23, 2019
ESEC/FSE 2018 ACM <i>Lake Buena Vista, FL</i>	November 5-9, 2018
NSBC 2018 National Society of Blacks in Computing <i>New Orleans, LA</i>	August 9-11, 2018
Open Source 101 Opensource.com <i>Raleigh, NC</i>	February 2017, 2018
NSBC 2017 National Society of Blacks in Computing <i>Atlanta, GA</i>	June 1-3, 2017
ESEC/FSE 2016 ACM <i>Seattle, WA</i>	November 14-18, 2016
LeaderShape Duke University <i>Sophia, NC</i>	August 2012

HONORS AND AWARDS

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

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, Linux, Windows, LaTeX, Android