

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*
Adviser: 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

Understanding the Impact of GitHub Suggested Changes on Recommendations Between Developers
Chris Brown, Chris Parnin ESEC/FSE 2020
· 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
· International Conference on Mining Software Repositories

Mining Specifications from Documentation Using a Crowd
Peng Sun, **Chris Brown**, Ivan Beschastnikh, Kathryn T. Stolee SANER 2019
· 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
· 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
· 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
· Conference on Innovation and Technology in Computer Science Education

Workshops

Sorry to Bother You Again: Developer Recommendation Choice Architectures for Designing Effective Bots
Chris Brown, Chris Parnin BotSE 2020
· International Workshop on Bots in Software Engineering in conjunction with ICSE

Comparing Different Developer Behavior Recommendation Styles

Chris Brown, Chris Parnin

CHASE 2020

- International Workshop on Cooperative and Human Aspects of Software Engineering, in conjunction with ICSE

Sorry to Bother You: Designing Bots for Effective Recommendations

Chris Brown, Chris Parnin

BotSE 2019

- 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

- Special Interest Group on Computer Science Education Technical Symposium

Doctoral Symposium

Digital Nudges for Encouraging Developer Actions

Chris Brown, Chris Parnin

ICSE 2019

- 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

- 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 to configure and robottelo tests with Docker using YAML files

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 (Dr. Chris Parnin)

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
- Developed and evaluated *class-bot* systems to determining the impact of digital nudges on improving student programming behaviors

Research Assistant

Fall 2017 - Spring 2018

North Carolina State University (Dr. Emerson-Murphy-Hill)

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 (Dr. Emerson Murphy-Hill)

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 (Dr. Guoliang Jin)

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 (Dr. Susan Rodger)

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 (Dr. Chad Jenkins)

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

Teaching and Communication Certificate

September 2019 - present

North Carolina State University

Raleigh, NC

- NC State Graduate Certificate program requiring 100 hours of approved workshops and activities

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

Future Faculty Diversity Program at Virginia Tech* <i>Virtual</i>	October 4-7, 2020
Red Hat Research Day Infrastructure Software <i>Virtual</i>	September 30, 2020
NC State Academic Packways* <i>Virtual</i>	June 4-5, 2020
NC State Virtual Writing Retreat* <i>Virtual</i>	May 4-8, 2020
Open Source 101 at Home* <i>Virtual</i>	May 12, 2020
All Things Open Red Hat <i>Raleigh, NC</i>	October 2016, 2017, 2018, 2019, 2020
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 <i>Opensource.com 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 <i>Duke University Sophia, NC</i>	August 2012

HONORS AND AWARDS

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

* Virtual due to COVID-19