

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

An Empirical Study on Regular Expression Bugs SANER 2019
Peipei Wang, *Chris Brown*, Jamie Jennings, Kathryn T. Stolee
· International Conference on Mining Software Repositories
Seoul, South Korea

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

Comparing Different Developer Behavior Recommendation Styles CHASE 2020
Chris Brown, Chris Parnin
· International Workshop on Cooperative and Human Aspects of Software Engineering in conjunction with ICSE 2020
Seoul, South Korea
· Full paper

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

Sorry to Bother You: Designing Bots for Effective Recommendations 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 *Denver, CO*
· ACM Special Interest Group on Computer Science Education

Doctoral Symposium

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

Posters

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

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

Software Engineering Lecture Presentation

March 2, 2020

NC State CSC326: Software Engineering

Raleigh, NC

- "CSC326 Team Project Bot" lecture presentation and `class-bot` tool demo for the undergraduate software engineering course

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 AND INVITED TALKS

NC State Technical Projects Expo

March 27, 2020

"Digital Nudges for Encouraging Developer Behaviors"

Raleigh, NC

- Graduate student showcase for class, research, or personal projects to present to employers and invited companies.

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

Blackbaud

· Present the work completed during my internship to Blackbaud interns and employees

August 2016

Raleigh, NC

OTHER CONFERENCES

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

NC State CSC PhD Recruitment Event Coordinator <i>Raleigh, NC</i>	2019 - 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 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

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