

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

Understanding the Impact of GitHub Suggested Changes on Recommendations Between Developers
Chris Brown, Chris Parnin * *Virtual due to COVID-19*
· ACM European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020)

An Empirical Study on Regular Expression Bugs
Peipei Wang, **Chris Brown**, Jamie A. Jennings, Kathryn T. Stolee * *Virtual due to COVID-19*
· ACM International Conference on Mining Software Repositories (MSR 2020)

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

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

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

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

Workshops

Comparing Different Developer Behavior Recommendation Styles
Chris Brown, Chris Parnin * *Virtual due to COVID-19*
· ACM International Workshop on Cooperative and Human Aspects of Software Engineering, in conjunction with ICSE (CHASE 2020)

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

Chris Brown, Chris Parnin

* Virtual due to COVID-19

- ACM International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2020)

Sorry to Bother You: Designing Bots for Effective Recommendations

Chris Brown, Chris Parnin

Montreal, QC, Canada

- IEEE International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2019)

Experimenting with and Integrating Alice 2.3 into many disciplines (demo)

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

- ACM Special Interest Group on Computer Science Education (SIGCSE 2013)

Doctoral Symposium

Digital Nudges for Encouraging Developer Actions

Chris Brown, Chris Parnin

Montreal, QC, Canada

- IEEE International Conference on Software Engineering (ICSE 2019)

Poster

Integrating Computer Science into Middle School Mathematics

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

Denver, CO

- ACM Special Interest Group on Computer Science Education (SIGCSE 2013)

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

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

Instructor

May 2020 - present

*North Carolina State University*** Virtual due to COVID-19*

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

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

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

PRESENTATIONS AND INVITED TALKS

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

NC State University Academic Packways	* Virtual due to COVID-19	June 4-5, 2020
NC State University Virtual Writing Retreat	* Virtual due to COVID-19	May 4-8, 2020
Open Source 101 at Home	* Virtual due to COVID-19	May 12, 2020
All Things Open	<i>Raleigh, NC</i>	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 <i>Raleigh, NC</i>	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 <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 (ICSE 2019) <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

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-LSAMP ¹	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

¹North Carolina Louis Stokes Alliance for Minority Participation