

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

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## EDUCATION

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**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

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### 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**

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**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**

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**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

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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

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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

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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 <sup>1</sup>	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

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<sup>1</sup>North Carolina Louis Stokes Alliance for Minority Participation