DWAYNE CHRISTIAN BROWN, JR. ("CHRIS")
ASSISTANT PROFESSOR | DEPARTMENT OF COMPUTER SCIENCE | VIRGINIA TECH

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EDUCATION

North Carolina State University	2015 - 2021

Ph.D. in Computer Science
Dissertation: *Digital Nudges for Encouraging Developer Actions*
Advised by Dr. Chris Parnin

North Carolina State University	2015 - 2017

M.S. in Computer Science

Duke University	2009 - 2013

B.S. in Computer Science, with Distinction
Minor in African and African American Studies

ADDITIONAL EDUCATION

North Carolina State University	2019 - 2021

Teaching and Communication Graduate Certificate

EMPLOYMENT HISTORY

Virginia Polytechnic Institute and State University (Virginia Tech)	Blacksburg, VA

Assistant Professor, Fall 2021 - present

North Carolina State University (NC State)	Raleigh, NC

Research Assistant, Fall 2016 - Spring 2021
Teaching Assistant, Fall 2015 - Spring 2016

Red Hat	Raleigh, NC

Quality Engineering Intern, Summer 2018
Quality Engineering Intern, Summer 2017

Blackbaud	Charleston, SC

Software Quality Engineer Intern, Summer 2016

Bank of America	Charlotte, NC

Python Developer, July 2013 - July 2015

PUBLICATIONS

(*My name is in bold, underlined names are students directly supervised by me.*)

Journal Publications

[J1] Peipei Wang, **Chris Brown**, Jamie A. Jennings, Kathryn T. Stolee. *Demystifying Regular Expression Bugs: A comprehensive study on regular expression bug causes, fixes, and testing.* Empirical Software Engineering (EMSE 2022). [`https://doi.org/10.1007/s10664-021-10033-1`]

Conference Publications

[C10] Swanand Vaishampayan, Sahar Farzanehpour, **Chris Brown**. *Procedural Justice and Fairness in Automated Resume Parsers for Tech Hiring: Insights from Candidate Perspectives.* Visual Languages and Human-Centric Computing (VL/HCC 2023).

[C9] Minhyuk Ko, Dibyendu Brinto Bose, Hemayet Ahmed Chowdhury, Mohammed Seyam, **Chris Brown**. *Exploring the Barriers and Factors that Influence Debugger Usage for Students.* Visual Languages and Human-Centric Computing (VL/HCC 2023).

[C8] <u>Tianjia Wang</u>, Daniel Vargas Diaz, **Chris Brown**, Yan Chen. *Towards Adapting Computer Science Courses to AI Assistants' Capabilities.* Visual Languages and Human-Centric Computing (VL/HCC 2023).

[C7] Mahnaz Behroozi, Chris Parnin, **Chris Brown**. *Asynchronous Technical Interviews: Reducing the Effect of Supervised Think-Aloud on Communication Ability.* Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022). [22% acceptance] 🏆 `Distinguished Paper Award` 🏆

[C6] **Chris Brown**, Chris Parnin. *Understanding the Impact of GitHub Suggested Changes on Recommendations Between Developers.* Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2020). [`https://doi.org/10.1145/3368089.3409722`]

[C5] Peipei Wang, **Chris Brown**, Jamie A. Jennings, Kathryn T. Stolee. *An Empirical Study on Regular Expression Bugs.* International Conference on Mining Software Repositories (MSR 2020). [`https://doi.org/10.1145/3379597.3387464`]

[C4] Peng Sun, **Chris Brown**, Ivan Beschastnikh, Kathryn T. Stolee. *Mining Specifications from Documentation Using a Crowd.* International Conference on Software Analysis, Evolution and Reengineering (SANER 2019). [`https://doi.org/10.1109/SANER.2019.8668025`]

[C3] **Chris Brown**, Justin Middleton, Esha Sharma, Emerson Murphy-Hill. *How Software Users Recommend Tools to Each Other.* Visual Languages and Human-Centric Computing (VL/HCC 2017). [`https://doi.org/10.1109/VLHCC.2017.8103460`]

[C2] Justin Smith, **Chris Brown**, Emerson Murphy-Hill. *Flower: Navigating Program Flow in the IDE.* Visual Languages and Human-Centric Computing (VL/HCC 2017). [`https://doi.org/10.1109/VLHCC.2017.8103445`]

[C1] Susan H. Rodger, **Dwayne Brown**, Michael Hoyle, Daniel MacDonald, Michael Marion, Elizabeth Onstwedder, Bella Onwumbiko, Edwin Ward. *Weaving Computing into all Middle School Disciplines.* Innovation and Technology in Computer Science Education (ITiCSE 2014). [`https://doi.org/10.1145/2591708.2591754`]

Workshop Publications

[W9] <u>Nivishree Palvannan</u>, **Chris Brown**. *Suggestion Bot: Analyzing the Impact of Automated Suggested Changes on Code Reviews.* International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2023).

[W8] <u>Md Mahim Anjum Haque</u>, Wasi Uddin Ahmad, Ismini Lourentzou, **Chris Brown**. *FixEval: Execution-based Evaluation of Program Fixes for Programming Problems.* International Workshop on Automated Program Repair in conjunction with ICSE (APR 2023).

[W7] **Chris Brown**. *Nudging Developers to Participate in SE Research.* International Workshop on Recruitment Of Participants for Empirical SE Studies in conjunction with CHI (ROPES 2022). [`https://ropes-workshops.github.io/ropes22/`]

[W6] **Chris Brown**, Chris Parnin. *Dark Patterns for Influencing Developer Behavior.* What Can CHI Do About Dark Patterns? Workshop in conjunction with CHI (Dark Patterns 2021). [`https://darkpatternsindesign.com/position-papers/`]

[W5] **Chris Brown**, Chris Parnin. *Nudging Students Toward Better Software Engineering Behaviors.* International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2021). [`https://doi.org/10.1109/BotSE52550.2021.00010`]

[W4] **Chris Brown**, Chris Parnin. *Comparing Different Developer Behavior Recommendation Styles.* International Workshop on Cooperative and Human Aspects of Software Engineering in conjunc-

tion with ICSE (CHASE 2021). [https://doi.org/10.1145/3387940.3391481]

[W3] **Chris Brown**, Chris Parnin. *Sorry to Bother You Again: Developer Recommendation Choice Architectures for Designing Effective Bots.* International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2020). [https://doi.org/10.1145/3387940.3391506]

[W2] **Chris Brown**, Chris Parnin. *Sorry to Bother You: Designing Bots for Effective Recommendations.* International Workshop on Bots in Software Engineering in conjunction with ICSE (BotSE 2019). [https://doi.org/10.1109/BotSE.2019.00021]

[W1] Susan H. Rodger, Steve Cooper, Wanda Dann, **Dwayne C. Brown**, Jacobo Carrasquel. *Experimenting with and Integrating Alice 2.3 into many disciplines (abstract only).* Special Interest Group on Computer Science Education (SIGCSE 2013). [https://doi.org/10.1145/2445196.2445513]

Doctoral Symposia

[DS1] **Chris Brown**. *Nudges for Encouraging Developer Actions.* International Conference on Software Engineering: Companion Proceedings (ICSE 2019). [https://doi.org/10.1109/ICSE-Companion.2019.00082]

Posters

[P5] Sahar Farzanehpour, **Chris Brown**, Swanand Vaishampayan. "Automated Resume Parsing: Resume vs. Online Profiles". *Virginia Tech Undergraduate Research in Computer Science Spring Symposium* (VTURCS 2023) [non-peer reviewed]

[P4] Jenna Krebs, **Chris Brown**. "A Study of Exponent and Pramp as Technical Interview Preparation Tools". *Virginia Tech Dennis Dean Undergraduate Research and Creative Scholarship Conference.* 2023 [non-peer reviewed]

[P3] Grace Govan, Sean Gruber, **Chris Brown**. "Gaps in Software Engineering Education". *Virginia Tech Undergraduate Research in Computer Science Spring Symposium* (VTURCS 2022) [non-peer reviewed]

[P2] Hennah Nazari, Brian Bell, **Chris Brown**, Sang Won Lee. "Understanding Challenges in Technical-Interview Preparation Process". *Virginia Tech Undergraduate Research in Computer Science Spring Symposium* (VTURCS 2022) [non-peer reviewed]

[P1] Susan H. Rodger, **Dwayne C. Brown**, Michael Hoyle, Michael Marion. *Integrating Computer Science into Middle School Mathematics.* Special Interest Group on Computer Science Education (SIGCSE 2013). [https://doi.org/10.1145/2445196.2445424]

PRESENTATIONS AND TALKS

Invited Talks

[T4] *How to Recommend Tools for Finding and Fixing Software Errors* or *Overcoming the Unwise Monkeys of Tool Adoption.* It Will Never Work in Theory (NWiT) session at Strange Loop, September 23, 2022. St. Louis, MO.

[T3] *Sorry to Bother You! Effective OSS Recommendations.* DevConf.US Open Source Community Conference, August 17, 2019. Boston, MA.

[T2] *How to Improve Software Tool Discovery and Usage.* Red Hat QECampX, October 10, 2018. Raleigh, NC.

[T1] *How Software Users Recommend Tools to Each Other.* Laboratory for Analytic Sciences (LAS) Wednesday Research Meeting, November 29, 2017. Raleigh, NC.

Invited Panels

[T3] *VT Academic Jobs Panel.* Virginia Tech CS Grad Council, December 2, 2021. Blacksburg, VA.

[T2] *NC State Career Retreat: Success Stories.* NC State Graduate School Professional Development Team, July 16, 2021. Virtual.*

[T1] *Undergraduate Research Conference Panel.* North Carolina Louis Stokes Alliance for Minority Participation (NC-LSAMP) conference. November 11, 2017. Raleigh, NC.

Miscellaneous Presentations

[T6] *New Faculty Hire Conversation w/ Chris Brown.* Office of Postdoctoral Affairs, Virginia Tech. August 9, 2023.

[T5] Engineering Undergraduate Research Seminar (ENGR 1014), Virginia Tech. October 28, 2022.

[T4] Faculty Research Presentation. Graduate Student Recruiting Weekend. Virginia Tech. March 18, 2022.

[T3] *Code World, No Blanket.* Graduate Seminar (CS 5944), Virginia Tech. September 10, 2021.

[T2] Meet the Faculty. Graduate Seminar (CS 5944), Virginia Tech. September 3, 2021.

[T1] *Digital Nudges for Encouraging Developer Behaviors.* NC State Three Minute Thesis (3MT) competition, September 24, 2020. Virtual.*

Invited Meetings

[M1] *Software Developer Diversity and Inclusion Workshop.* NII Shonan Meeting, June 26-29, 2023. Kanagawa, Japan.

RESEARCH FUNDING (TOTAL = $128,000 / $102,500)

(*I am the primary investigator (PI) unless otherwise specified. My portion is provided in parentheses.*)

[G3] **Student Engineers' Council Big Contribution Grant (2023)** $8,000

[G2] **Commonwealth Cyber Initiative (CCI): Securing Interactions between Humans and Machines (2022)** $60,000 ($58,500)
Understanding the Impact of Data Privacy Regulations on Software and Its Stakeholders
· Co-PI: Aaron Brantly (*Political Science*), Virginia Tech

[G1] **Google Award for Inclusion Research (2022)** $60,000 ($36,000)
Supporting Under-Resourced Software Engineering Job Seekers through Facilitating Online Collaboration in Technical Interview Preparation
· Co-PI: Sang Won Lee, Virginia Tech

TEACHING

(*I am the instructor of record unless otherwise specified.*)

Virginia Tech

CS 5704: Software Engineering
Spring 2022, Spring 2023

CS 5974: Independent Study
Summer 2022, Spring 2023

CS 4974: Independent Study
Spring 2023, Summer 2023

CS 3704: Intermediate Software Design and Engineering

Fall 2023

CS 2974: Independent Study
Spring 2022

NC State

Summer 2020	CSC116: Introduction to Computing - Java*
Spring 2016	CSC216: Java Programming Concepts *(Teaching Assistant)*
Fall 2015	CSC326: Software Engineering *(Teaching Assistant)*

<u>Miscellaneous</u>

The Coding School Python Instructor
Summer 2019 *Virtual*
· Tutored a high school student through the codeConnects teaching and mentorship summer program for underrepresented minorities in STEM.

SERVICE

External Service

Journal Reviewer

IEEE Software (*Special Issue on Developing your Software Engineering Career*): 2023
Empirical Software Engineering (EMSE): 2022, 2023
IEEE Software: 2022
IEEE Software (*Special Issue Bots in Software Engineering*): 2022
PeerJ Computer Science: 2021
IEEE Transactions on Software Engineering (TSE): 2021

Program Committee Member

Foundations of Software Engineering (FSE): 2023 [Tutorials Track]
Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium: 2023 [Birds of a Feather Track]
International Workshop on Bots in Software Engineering (BotSE): 2021, 2022, 2023
International Conference on Cooperative and Human Aspects of Software Engineering (CHASE): 2022

Organizing Committee

Foundations of Software Engineering (FSE): 2024 [Web Co-Chair]

Session Chair

International Conference on Cooperative and Human Aspects of Software Engineering (CHASE): 2022 [Mixed Session]

Internal Service

Department of Computer Science

Undergraduate Program Committee: Fall 2022 - present
Software Engineering PhD Qualifying Exam Committee: 2022, 2023

Virginia Tech

Future Faculty Diversity Program (2020 Cohort)

ADVISING

PhD Students
(*Co-advisor*)

Yoseph Berhanu	Fall 2023 - present
Arpit Thool	Fall 2023 - present
Dibyendu Brinto Bose	Spring 2023 - present
Swanand Vaishampayan	Spring 2023 - present
Tianjia Wang (*Dr. Yan Chen*)	Spring 2023 - present
Hunter Leary	Fall 2022 - present
Minhyuk Ko	Fall 2022 - present
Xiaoxiao Gan	Summer 2022 - present
Shawal Kahlid	Spring 2022 - present

MS Students

Sahar Farzanehpour	Fall 2023 - present, expected Spring 2025
Peiqing Guo	Fall 2023 - present, expected Spring 2025
Swetha Rajeev	Spring 2023 - present, expected Fall 2024
Tian-Yu Shing	Spring 2023 - present, expected Fall 2024
Huayu Liang	Spring 2023 - present, expected Fall 2024
Jeffrey Smith	Fall 2022 - present, expected Fall 2023
Brian Bell*	Spring 2022 - Sprring 2023
Lucas Franke*	Spring 2022 - Spring 2023
Mahim Haque	Spring 2022 - present, expected Fall 2023
Ryan Wood	Spring 2022 - Spring 2023
Sean Gruber	Fall 2021 - Spring 2023
Nivishree Palvannan	Fall 2021 - Spring 2023

* Accelerated BS/Master's program

Undergraduate Students

Jenna Krebs	Spring 2023
Sahar Farzanehpour	Spring 2023
PeiQing Guo	Spring 2022
Grace Govan	Fall 2021 - Sprint 2022

Undergraduate Summer Researchers

Dylan Murphy	Summer 2023

Multicultural Academic Opportunities Program (MAOP)

Omer Ahmed	Summer 2023
Edwin Lewis II (Morehouse)	Summer 2023
Colin Roberts	Summer 2023

* Virginia Tech students unless otherwise specified

🏆 Student Awards 🏆

Shawal Khalid	*Bitshares Fellowship*
Brian Bell	*New Horizon Graduate Scholar*

Thesis Advisory Committees
(*Student advisor, committees are for the CS Department at Virginia Tech unless otherwise specified.*)

- Miles Frantz, PhD (*Dr. Daphne Yao*)
- Divyansh Mishra, MS (*Dr. Steve Edwards*)
- Alex Hicks, PhD (*Dr. Cliff Shaffer*)

- Juntong Chen, MS (*Dr. Na Meng*)
- Ming Zhu, PhD (*Dr. Ismini Lourentzou* and *Dr. Daphne Yao*)

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* Virtual due to COVID-19