DAVID PORFIRIO
CURRICULUM VITAE, OCTOBER, 2021

University of Wisconsin–Madison
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RESEARCH INTERESTS

My goal is to make programming social robots easy and approachable for interaction designers and end-user developers alike. I use **formal verification** to assist robot programmers reason about interaction social norms, **program synthesis** to assist programmers in implementing these interactions, and **program repair** to automatically fix these interactions.

EDUCATION

PhD	University of Wisconsin–Madison (UW–Madison), Madison, WI, USA Computer Sciences	2018-present
MSc	UW–Madison, Madison, WI, USA Computer Sciences	2016-2018
BS	University of Arizona (UA), Tucson, AZ, USA Double degree (hon) in computer science and physiology Minor in mathematics Summa cum laude	2011-2016

WORK & RESEARCH EXPERIENCE

Doctoral Research — 2016-present
UW–Madison, Madison, WI, USA
Computer Sciences
Committee: Drs. Bilge Mutlu, Aws Albarghouthi, Maya Cakmak, and Kevin Ponto

Research Intern — Summer 2021
Nokia Bell Labs, New Providence, NJ, USA (Virtual)
Mentors: Drs. Martin Carroll, Kedar Namjoshi, Itai Segall

Undergraduate Senior Thesis — 2015-2016
UW–Madison, Madison, WI, USA
Computer Sciences
Advisor: Dr. John Kececioglu

Undergraduate Research — 2013-2014
UW–Madison, Madison, WI, USA
Computer Sciences
Advisors: Drs. E. Fiona Bailey and Joanna Masel

FELLOWSHIPS, HONORS, and AWARDS

Microsoft Dissertation Grant — 2021
Awarded $21,148 for dissertation research

Cisco Graduate Student Fellowship — 2021
Selected by the UW–Madison Computer Sciences Department

Heidelberg Laureate Forum — 2019
Invited to attend as a young researcher

Best Paper Award — 2018
UIST '18

NSF Graduate Research Fellowship — 2017

Advanced Opportunity Fellowship — 2016
Selected by the UW–Madison Computer Sciences Department

Excellence in Undergraduate Research Award   2016
Selected by the UA Department of Computer Science

Galileo Circle Scholar   2015
Selected by the UA Department of Computer Science

National Hispanic Scholar   2011
Selected by the National Hispanic Recognition Program

Dean's List with Distinction   2011-2016
Awarded during six semesters at UA

REFEREED FULL PAPERS

Porfirio, D., Stegner, L., Cakmak, M., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2021, May). Figaro: A Tabletop Authoring Environment for Human-Robot Interaction. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-15).

Porfirio, D., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2020, April). Transforming robot programs based on social context. In Proceedings of the 2020 CHI conference on human factors in computing systems (pp. 1-12).

Porfirio, D., Fisher, E., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2019, October). Bodystorming Human-Robot Interactions. In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (pp. 479-491). ACM.

Porfirio, D., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2018, October). Authoring and verifying human-robot interactions. In The 31st Annual ACM Symposium on User Interface Software and Technology (pp. 75-86). ACM.

Xiong, K., McEntee, J. P., **Porfirio, D. J.**, & Masel, J. (2017). Drift barriers to quality control when genes are expressed at different levels. Genetics, 205(1), 397-407.

Shumway, K. R., **Porfirio, D. J.**, & Bailey, E. F. (2015). Phonation-related rate coding and recruitment in the genioglossus muscle. Experimental brain research, 233(7), 2133-2140.

REFEREED SHORT PAPERS

Porfirio, D., Cakmak, M., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2021, May). Interaction Templates: A Data-Driven Approach for Authoring Robot Programs. In 2021 12th Annual Workshop on Evaluation and Usability of Programming Languages and Tools (PLATEAU) (in press).

Porfirio, D., Sauppé, A., Albarghouthi, A., & Mutlu, B. (2019, March). Computational Tools for Human-Robot Interaction Design. In 2019 14th ACM/IEEE International Conference on Human-Robot Interaction (HRI) (pp. 733-735). IEEE.

TEACHING EXPERIENCE

Grandparents University Instructor   Summers 2018-2019.
Co-organized social robotics lecture and lab sessions for children and their grandparents.

Teaching Assistant, UA   Summer 2015
CSC 352, Systems Programming and Unix
Duties: holding office hours and grading programming assignments

Section Leader, UA   Fall 2014 - Spring 2015
CSC 245, Introduction to Discrete Structures
CSC 227, Program Design and Development
Duties: teaching lab sessions, holding office hours, and grading assignments

REFEREE SERVICES

Reviewer
2021 ACM Symposium on User Interface Software and Technology (UIST)
2021 AAAI Artificial Intelligence for Human-Robot Interaction (AI-HRI) Fall Symposium Series
2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI) Late Breaking Reports
2021 ACM/IEEE International Conference on Human-Robot Interaction (HRI) PIONEERS Workshop
2020 ACM Transactions on Human-Robot Interaction (THRI)
2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI) Alt.HRI

TECHNICAL SKILLS

Programming
Python, Golang, Java, Javascript, HTML, CSS, C#, C

Tools, Libraries, and Frameworks
ROS, Z3 Theorem Prover, PRISM Model Checker, NuSMV Model Checker, LaTeX, Git, OpenCV, D3.js, Matplotlib

Robot Platforms
Softbank Pepper, Softbank Nao, Temi, iRobot Create 2

Software
Illustrator, Premiere, Photoshop, Unity, Office