

Thomas W. Price

Department of Computer Science
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Education

| | | |
|--|---------------------------------|------|
| Ph.D. in Computer Science | North Carolina State University | 2018 |
| Thesis: <i>iSnap: Data-driven Support for Novice Programming Informed by Evaluations of Hint Quality and Investigations of Student Help-seeking Behavior</i> | | |
| Committee: Dr. Tiffany Barnes (advisor), Dr. James Lester, Dr. Sarah Heckman, Dr. Roger Azevedo | | |
| M.S. in Computer Science | North Carolina State University | 2015 |
| B.S. in Computer Science | Elon University | 2013 |
| Thesis: <i>Engineering on the Go: Designing a Game Maker on the Android Platform</i> | | |

Professional History

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| Assistant Professor | North Carolina State University | 2018 – Present |
| Graduate Research Assistant | North Carolina State University | 2013 – 2018 |

Research

Research Interests

- Computing Education Research
- Advanced Learning Technologies
- Educational Data Mining

Research Grants (Total \$3.68M):

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|--|--------|--------------------|
| NSF: CISE Community Research Infrastructure (CCRI) | \$461K | 2022 - Present |
| An Infrastructure for Sustainable Innovation and Research in Computer Science Education | | Role: PI |
| NSF: Improving Undergraduate STEM Education | \$300K | 2022 - Present |
| Generalizing Data-Driven Technologies to Improve Individualized STEM Instruction by Intelligent Tutors | | Role: Co-PI |
| NSF: Improving Undergraduate STEM Education | \$2.0M | 2020 - Present |
| # 2013502 : Generalizing Data-Driven Technologies to Improve Individualized STEM Instruction by Intelligent Tutors | | Role: Co-PI |
| NSF: Improving Undergraduate STEM Education | \$175K | 2020 - Present |
| # 1917885 : Analysis of a Simple, Low-cost Intervention's Impact on Retention of Women in Computer Science | | Role: Co-PI |
| NSF: Cyberlearning & Future Learning Technologies | \$750K | 2019 - Present |
| # 1917885 : Intelligent Support for Creative, Open-ended Programming Projects | | Role: PI |

Teaching Experience

- CSC110:** Computer Science Principles NC State University 2019-Present
- Taught Falls 2019-2022
 - Co-designed the course as a new introduction to computational thinking for non-majors
 - Course features novice-friendly programming, creative projects, and societal applications
- CSC422:** Automated Learning and Data Analysis NC State University 2018-Present
- Taught Springs 2019-2022
 - Undergraduate data mining and machine learning course, featuring a large, collaborative course project designed to apply machine learning to solve a meaningful problem
- CSC522:** Automated learning and Data Analysis NC State University 2018-Present
- Taught Springs 2019-2022
 - Graduate data mining and machine learning course, covering advanced concepts including deep learning, support vector machines and association rule mining

Publications

Peer-Reviewed Publications in Academic Journals

- J5. S. Marwan and **T.W. Price**. iSnap: Evolution and Evaluation of a Data-Driven Hint System for Block-based Programming. *IEEE Transactions on Learning Technologies*. 2023.
- J4. S. Marwan, B. Akram, T. Barnes, and **T.W. Price**. Adaptive Immediate Feedback for Block-Based Programming: *Design and Evaluation*. *IEEE Transactions on Learning Technologies*. 15(3). 2022.
- J3. **Price, T.W.**, Y. Dong, R. Zhi, B. Paaßen, N. Lytle, V. Cateté, T. Barnes. "A Comparison of the Quality of Data-driven Programming Hint Generation Algorithms." *International Journal of Artificial Intelligence in Education*. 2019.
- J2. Paaßen, B., B. Hammer, **T. W. Price**, T. Barnes, S. Gross and N. Pinkwart. "The Continuous Hint Factory - Providing Hints in Continuous and Infinite Spaces." *Journal of Educational Data Mining*. 2018.
- J1. Cardona-Rivera, R.*, **T. W. Price***, D. Winer* and R. M. Young. "Question Answering in the Context of Stories Generated by Computers." *Advances in Cognitive Systems*. 2016.
* *The first three authors are considered co-first authors on this publication.*

Peer-Reviewed Publications in Conference Proceedings¹

- C50. J. Skripchuk, N. Bennett, J. Zheng, E. Li and **T.W. Price**. Analysis of Novices' Web-Based Help-Seeking Behavior While Programming. Proceedings of the ACM SIGCSE Technical Symposium. 2023 (accepted).
- C49. W. Wang, G. Fraser, M. Bobbadi, B.T. Tabarsi, T. Barnes, C. Martens, S. Jiao and **T.W. Price**. Pinpoint: A Record, Replay, and Extract System to Support Code Comprehension and Reuse. Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC). 2022. (29% acceptance rate; 12/41 full papers.)
- C48. C. Hunt, S. Yoder, T. Comment, **T.W. Price**, B. Akram, L. Battestilli, T. Barnes and S. Fisk. Gender, Self-Assessment, and Persistence in Computing: How gender differences in self-assessed ability reduce women's persistence in computer science. Proceedings of the International

¹ Top-tier conferences in CS Education, Intelligent Tutoring Systems and Educational Data Mining are selective venues for archival research, often exceeding journals in their selectivity, visibility and impact.

★ Indicates a representative paper

- Computing Education Research Conference (ICER). 2022. (**17% acceptance rate**; 25/151 full papers.)
- C47. Y. Shi, M. Chi, T. Barnes, and **T.W. Price**. Code-DKT: A Code-based Knowledge Tracing Model for Programming Tasks. Proceedings of the International Conference on Educational Data Mining. 2022. (29% acceptance rate; 26/91 full papers.)
- C46. A. Limke, A. Milliken, V. Cateté, I. Gransbury, A. Isvik, **T.W. Price**, C. Martens, and T. Barnes. Case Studies on the Use of Storyboarding by Novice Programmers. Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education. 2022. (29% acceptance rate; 29/276 full papers.)
- C45. G.R. Bai, K. Presler-Marshall, **T.W. Price**, K.T. Stolee. Check It Off: Exploring the Impact of a Checklist Intervention on the Quality of Student-authored Unit Tests. Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education. 2022. (29% acceptance rate; 29/276 full papers.)
- C44. B. Akram, S. Fisk, S. Yoder, C. Hunt, **T.W. Price**, L. Battestilli, and T. Barnes. Increasing Students' Persistence in Computer Science through a Lightweight Scalable Intervention. Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education. 2022. (29% acceptance rate; 29/276 full papers.)
- C43. J. Skripchuk, Y. Shi, **T.W. Price**. Identifying Common Errors in Open-Ended Machine Learning Projects. Proceedings of the ACM Technical Symposium on Computer Science Education. 2022. (29% acceptance rate; 144/516 full papers.)
- C42. ★ W. Wang, A. Le Meur, M. Bobbadi, B. Akram, T. Barnes, C. Martens, **T.W. Price** (2022). Exploring Design Choices to Support Novices' Example Use During Creative Open-Ended Programming. Proceedings of the ACM Technical Symposium on Computer Science Education. 2022. (29% acceptance rate; 144/516 full papers; **Best Experience Report Paper Award**.)
- C41. Y. Mao, F. Khoshnevisan, **T.W. Price**, T. Barnes, and M. Chi. Cross-Lingual Adversarial Domain Adaptation for Novice Programming. Proceedings of the AAAI Conference on Artificial Intelligence. 2022. (**15% acceptance rate**.)
- C40. A. Card, W. Wang, C. Martens, **T.W. Price**. (2021). Scaffolding Game Design: Towards Tool Support for Planning Open-Ended Projects in an Introductory Game Design Class. Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 1–5. (short paper.)
- C39. S. Marwan, P. Shabrina, A. Milliken, I. Menezes, V. Catete, **T.W. Price**, T. Barnes. (2021). Promoting Students' Progress-Monitoring Behavior during Block-Based Programming. Proceedings of the Koli Calling International Conference on Computing Education Research, 1–10. (26% acceptance rate; 20/76 full papers.)
- C38. ★ S. Marwan, Y. Shi, I. Menezes, M. Chi, T. Barnes, **T. W. Price**, “Just a Few Expert Constraints Can Help: Humanizing Data-Driven Subgoal Detection for Novice Programming”. Proceedings of the International Conference on Educational Data Mining (EDM) 2021. (Acceptance Rate 22.0%, 22/100 Full Papers, **Best Full Paper Award**).
- C37. Y. Mao, Y. Shi, S. Marwan, **T.W. Price**, T. Barnes and M. Chi, “Knowing both when and where: Temporal-ASTNN for Early Prediction of Student Success in Novice Programming Tasks”. Proceedings of the International Conference on Educational Data Mining (EDM) 2021. (Acceptance Rate 22.0%, 22/100 Full Papers).
- C36. Y. Shi, Y. Mao, T. Barnes, M. Chi and **T. W. Price**, “More With Less: Exploring How to Use Deep Learning Effectively through Semi-supervised Learning for Automatic Bug Detection in Student Code”. Proceedings of the International Conference on Educational Data Mining (EDM) 2021. (Combined Acceptance Rate 27.2%, 44/162 Short Papers).

- C35. Y. Dong, S. Marwan, P. Shabrina, T. Barnes and **T.W. Price**, “Using Student Trace Logs To Determine Meaningful Progress and Struggle During Programming Problem Solving”. Proceedings of the International Conference on Educational Data Mining (EDM) 2021. (Combined Acceptance Rate 27.2%, 44/162 Short Papers).
- C34. W. Wang, C. Zhang, A. Stahlbauer, G. Fraser, **T.W. Price**, “SnapCheck: Automated Testing for Snap! Programs”. ITiCSE’21 – Proceedings of the 2021 ACM Conference on Innovation and Technology in Computer Science Education, to appear. 2021. (31% acceptance rate; 84/275 full papers.)
- C33. W. Wang, A. Kwatra, J. Skripchuk, N. Gomes, A. Milliken, C. Martens, T. Barnes, **T.W. Price**, “Novices’ Learning Barriers When Using Code Examples in Open-Ended Programming”. ITiCSE’21 – Proceedings of the 2021 ACM Conference on Innovation and Technology in Computer Science Education. 2021. (31% acceptance rate; 84/275 full papers.)
- C32. **T.W. Price**, S. Marwan, and J.J. Williams. (2021). Exploring Design Choices in Data-driven Hints for Python Programming Homework. Proceedings of the ACM Conference on Learning@ Scale, 283–286. 2021. (short paper).
- C31. Y. Shi, K. Shah, W. Wang, S. Marwan, P. Penmetsa, **T.W. Price**, “Toward Semi-Automatic Misconception Discovery Using Code Embeddings”. International Conference on Learning Analytics and Knowledge (LAK), 2021. (short paper; 31.6% acceptance rate).
- C30. A. Milliken, W. Wang, V. Cateté, S. Martin, N. Gomes, Y. Dong, R. Harred, A. Isvik, T. Barnes, **T.W. Price**, C. Martens. “PlanIT! A new integrated tool to help novices design for open-ended projects”. SIGCSE Technical Symposium, 2021.
- C29. G.Gao, S.Marwan, and **T.W. Price**. “Early Performance Prediction using Interpretable Patterns in Programming Process Data”. Accepted in SIGCSE Technical Symposium, 2021.
- C28. Marwan, S., G. Gao, S. Fisk, **T.W. Price**, and T. Barnes. “Adaptive Immediate Feedback Can Improve Novice Programming Engagement and Intention to Persist in Computer Science”. In the sixteenth annual ACM International Computing Education Research (ICER), 2020. (22.7% acceptance rate; 27/119 full papers)
- C27. **Price, T.W.**, S. Marwan, M. Winters, J.J. Williams, “An Evaluation of Data-driven Programming Hints in a Classroom Setting.” International Conference on Artificial Intelligence in Education (AIED). 2020. (short paper; 30.8% acceptance rate; 66/214 short papers)
- C26. Mao, Y., S. Marwan, **T.W. Price**, T. Barnes, M. Chi, “What Time is It? Student Modeling Needs to Know.” Proceedings of the International Conference on Educational Data Mining (EDM) 2020.
- C25. Marwan, S., A. Dombe, **T.W. Price**, “Unproductive Help-seeking in Programming: What it is and How to Address it” ITiCSE’20 – Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education. 2020.
- C24. **T.W. Price** et al. “ProgSnap2: A Flexible Format for Programming Process Data.” Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education. 2020. (27.6% acceptance rate; 72/261 full papers)
- C23. W. Wang, Y. Rao, R. Zhi, S. Marwan, G. Gao, **T.W. Price**, “The Step Tutor: Supporting Students through Step-by-Step Example-Based Feedback” (To be published in) ITiCSE’20 – Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education. 2020.
- C22. ★ **T.W. Price**, J.J. Williams, J. Solyst, S. Marwan, “Engaging Students with Instructor Solutions in Online Programming Homework.” (To be published in) Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems. 2020. (24.3% acceptance rate; 760/3126 papers)

- C21. W. Wang, R. Zhi, A. Milliken, N. Lytle, **T.W. Price**, "Crescendo: Engaging Students to Self-Paced Programming Practices." ACM Special Interest Group on Computer Science Education (SIGCSE). 2020.
- C20. ★ S. Marwan, J. J. Williams, **T.W. Price**. "An Evaluation of the Impact of Automated Programming Hints on Performance and Learning." International Computing Education Research Conference (ICER). 2019. (20.4% acceptance rate; 28/137 full papers)
- C19. R. Zhi, M. Chi, T. Barnes, T.W. Price. "Evaluating the Effectiveness of Parsons Problems for Block-based Programming." International Computing Education Research Conference (ICER). 2019. (20.4% acceptance rate; 28/137 full papers)
- C18. Zhi, R., S. Marwan, Y. Dong, N. Lytle, **T.W. Price**, T. Barnes. "Toward Data-Driven Example Feedback for Novice Programming." Proceedings of the International Conference on Educational Data Mining (EDM). 2019, forthcoming. (22.5% acceptance rate for full papers)
- C17. Mao, Y., R. Zhi, F. Khoshnevisan, **T.W. Price**, T. Barnes, M. Chi. "One minute is enough: Early Prediction of Student Success and Event-level Difficulty during a Novice Programming Task." Proceedings of the International Conference on Educational Data Mining (EDM). 2019, forthcoming. (22.5% acceptance rate for full papers; **Best Student Paper Award**).
- C16. Marwan, S., N. Lytle, J. J. Williams and **T. W. Price**. "The Impact of Adding Textual Explanations to Next-step Hints in a Novice Programming Environment." Proceedings of the Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2019, forthcoming. (28% acceptance rate; 67/243 full papers).
- C15. Zhi, R., **T. W. Price**, S. Marwan, A. Milliken, T. Barnes and M. Chi. "Exploring the Impact of Worked Examples in a Novice Programming Environment." ACM Special Interest Group on Computer Science Education (SIGCSE). 2019. (32% acceptance rate; 169/526 full papers)
- C14. Dong, Y., S. Marwan, V. Cateté, T. Barnes and **T. W. Price**. "Defining Tinkering Behavior in Open-ended Block-based Programming Assignments." ACM Special Interest Group on Computer Science Education (SIGCSE). 2019. (32% acceptance rate; 169/526 full papers)
- C13. **Price, T. W.**, R. Zhi, Y. Dong, N. Lytle and T. Barnes. "The Impact of Data Quantity and Source on the Quality of Data-driven Hints for Programming." *International Conference on Artificial Intelligence in Education*. 2018. (25% acceptance rate)
- C12. Zhi, R., N. Lytle, **T. W. Price**. "Exploring Instructional Support in an Educational Game for K-12 Computing Education." ACM Special Interest Group on Computer Science Education (SIGCSE). 2018, forthcoming (37% acceptance rate; 82/221 full CS Education Research papers).
- C11. ★ **Price, T. W.**, Z. Liu, V. Cateté and T. Barnes. "Factors Influencing Students' Help-Seeking Behavior while Programming with Human and Computer Tutors." *International Computing Education Research (ICER) Conference*. 2017. (27% acceptance rate; 29/108 full papers)
- C10. **Price, T. W.**, R. Zhi and T. Barnes. "Hint Generation Under Uncertainty: The Effect of Hint Quality on Help-Seeking Behavior." *International Conference on Artificial Intelligence in Education*. 2017. (30% acceptance rate; 36/121 full papers)
- C9. **Price, T. W.**, R. Zhi and T. Barnes. "Evaluation of a Data-driven Feedback Algorithm for Open-ended Programming." *International Conference on Educational Data Mining*. 2017. (42% acceptance rate; 32 short papers)
- C8. ★ **Price, T. W.**, Y. Dong and D. Lipovac. "iSnap: Towards Intelligent Tutoring in Novice Programming Environments." *ACM Special Interest Group on Computer Science Education (SIGCSE)*. 2017. (**Exemplary CS Research Paper Award**; 30% acceptance rate; 105/350 full papers)
- C7. **Price, T. W.**, N.C.C. Brown, D. Lipovac, T. Barnes and M. Kölling. "Evaluation of a Frame-based Programming Editor." *International Computing Education Research (ICER) Conference*. 2016. (25.5% acceptance rate; 26/102 full papers)

- C6. ★ **Price, T. W.**, Dong, T. and Barnes, T. "Generating Data-driven Hints for Open-ended Programming." *International Conference on Educational Data Mining*. 2016. (**Exemplary Paper Award**; 27.5% acceptance rate; 30/105 full papers)
- C5. Zhou, G., C. F. Lynch, **T. W. Price**, T. Barnes, M. Chi. "The Impact of Granularity on the Effectiveness of Students' Pedagogical Decision." *Annual Meeting of the Cognitive Science Society (CogSci)*. 2016. (34% acceptance rate; 222/656 full papers)
- C4. **Price, T. W.**, V. Cateté, J. Albert, T. Barnes and D. Garcia. "Lessons Learned from "BJC" CS Principles Professional Development." *ACM Special Interest Group on Computer Science Education (SIGCSE)*. 2016. (35.4% acceptance rate; 105/297 full papers)
- C3. **Price, T. W.**, J. Albert, V. Cateté and T. Barnes. "BJC in Action: Comparison of Student Perceptions of a Computer Science Principles Course." *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT) Conference*. 2015. (44.4% acceptance rate; 8/18 short papers)
- C2. ★ **Price, T. W.** and T. Barnes. "Comparing Textual and Block Interfaces in a Novice Programming Environment." *International Computing Education Research (ICER) Conference*. 2015. (26% acceptance rate; 25/96 full papers)
- C1. Zhou, G., **T. W. Price**, C. Lynch, T. Barnes and M. Chi. "The Impact of Granularity on Worked Examples and Problem Solving." *Annual Meeting of the Cognitive Science Society (CogSci)*. 2015. (28% acceptance rate; 187/666 full papers)

Peer-Reviewed Publications in Workshops

- W13. B. Tabarsi, A. Limke, H. Reichert, R. Qualls, **T.W. Price**, C. Martens and T. Barnes. How to Catch Novice Programmers' Struggle: Detecting Moments of Struggle in Open-Ended Block-Based Programming Projects using Trace Log Data. *Proceedings of the 6th Workshop on Educational Data Mining in Computer Science Education (CSEDM) at EDM'22*.
- W12. H. Reichert, A. Limke, B. Tabarsi, **T.W. Price**, C. Martens and T. Barnes. How, when, and why do novices struggle in programming? Exploring the experiences and perceptions of common programming moments in block-based environments. *Proceedings of the 6th Workshop on Educational Data Mining in Computer Science Education (CSEDM) at EDM'22*.
- W11. W. Wang, G. Fraser, C. Martens, **T.W. Price**. (2021). Execution-Trace-Based Feature Engineering To Enable Formative Feedback on Visual , Interactive Programs. *Proceedings of the 5th Workshop on Educational Data Mining in Computer Science Education (CSEDM) at EDM'21*, 1-10.
- W10. Marwan, S., **Price, T. W.**, Chi, M., & Barnes, T. (2020). Immediate Data-Driven Positive Feedback Increases Engagement on Programming Homework for Novices. *Proceedings of the 4th Workshop on Educational Data Mining in Computer Science Education (CSEDM) at EDM'20*.
- W9. Shabrina, P., Marwan, S., Chi, M., Barnes, T., & **Price, T. W.** (2020). The Impact of Data-driven Positive Programming Feedback: When it Helps, What Happens when it Goes Wrong, and How Students Respond. *Proceedings of the 4th Workshop on Educational Data Mining in Computer Science Education (CSEDM) at EDM'20*.
- W8. Wang, W., Rao, Y., Shi, Y., Milliken, A., Martens, C., Barnes, T. and **Price, T. W.**, "Comparing Feature Engineering Approaches to Predict Complex Programming Behaviors." *Educational Data Mining in Computer Science Education (CSEDM) Workshop @ EDM'20*
- W7. **Price, T. W.**, D. Hovemeyer, K. Rivers, A. C. Bart, A. Petersen, B. A. Becker and J. Lefever. "ProgSnap2: A Flexible Format for Programming Process Data." *2nd Educational Data Mining in Computer Science Education (CSEDM) Workshop at the International Conference on Learning Analytics and Knowledge (LAK)*. 2019, forthcoming.
- W6. **Price, T. W.**, J. J. Williams, S. Marwan. "A Comparison of Two Designs for Automated Programming Hints." *2nd Educational Data Mining in Computer Science Education (CSEDM)*

Workshop at the International Conference on Learning Analytics and Knowledge (LAK). 2019, forthcoming.

- W5. Zhi, R., **T. W. Price**, N. Lytle, Y. Dong and T. Barnes. "Reducing the State Space of Programming Problems through Data-Driven Feature Detection." *Educational Data Mining in Computer Science Education (CSEDM) Workshop at the International Conference on Educational Data Mining (EDM)*. 2018.
- W4. **Price**, T. W. and T. Barnes. "Position Paper: Block-based Programming Should Offer Intelligent Support for Learners." *Blocks and Beyond Workshop at the IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. 2017.
- W3. Lynch, C., **T. W. Price**, M. Chi and T. Barnes. "Using the Hint Factory to Compare Model-based Tutoring Systems." *Workshop on Graph-based Educational Data Mining at the International Conference on Educational Data Mining (EDM)*. 2015.
- W2. **Price**, **T. W.** and T. Barnes. "An Exploration of Data-Driven Hint Generation in an Open-Ended Programming Problem." *Workshop on Graph-based Educational Data Mining at the International Conference on Educational Data Mining (EDM)*. 2015.
- W1. **Price**, **T. W.** and R. M. Young. "Towards an Extended Declarative Representation for Camera Planning." *Workshop on Intelligent Cinematography and Editing (WICED) at the 28th AAAI Conference on Artificial Intelligence*. 2014.

Extended Abstracts, Posters, Demos and Discussions in Conference Proceedings

- A9. S. Fisk, C. Hunt, L. Battestilli, B. Akram, T. Barnes, **T.W. Price**, S. Yoder. Automating Personalized Feedback to Improve Students' Persistence in Computing. Proceedings of the 53rd ACM Technical Symposium on Computer Science Education. 2022.
- A8. **Price**, **T. W.** "iSnap: Automatic Hints and Feedback for Block-based Programming." *ACM Special Interest Group on Computer Science Education (SIGCSE)*. 2018, forthcoming.
- A7. **Price**, **T. W.** and T. Barnes. "Showpiece: iSnap Demonstration." IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC). 2017.
- A6. **Price**, **T. W.**, N. C. C. Brown, C. Piech and K. Rivers. "Sharing and Using Programming Log Data." *ACM Special Interest Group on Computer Science Education (SIGCSE)*. 2017.
- A5. Duval, S., D. Eagle, R. Narcisse, **T. W. Price**. "Clashroom: A Game to Enhance the Classroom Experience." *ACM Special Interest Group on Computer Science Education (SIGCSE)*. 2016.
- A4. **Price**, **T. W.**, V. Cateté, J. Albert and T. Barnes. "Determining the Impact of Teacher Professional Development on Perceived Ability to Teach a Computer Science Principles Course." *International Computing Education Research (ICER) Conference*. 2015.
- A3. **Price**, **T. W.** "Integrating Intelligent Feedback into Block Programming Environments." *Doctoral Consortium at the International Computing Education Research Conference (ICER)*. 2015.
- A2. **Price**, **T. W.** and T. Barnes. "Creating Data-driven Feedback for Novices in Goal-driven Programming Projects." *Doctoral Consortium at the International Conference on Artificial Intelligence in Education (AIED)*. 2015.
- A1. **Price**, **T. W.**, Lynch, C., T. Barnes and M. Chi. "An Improved Data-Driven Hint Selection Algorithm for Probability Tutors." *International Conference on Educational Data Mining (EDM)*. 2015.

Professional Service and Memberships

Organization of Conferences and Workshops:

Workshops Co-Chair, International Educational Data Mining Conference
Associate Program Chair, ACM SIGCSE Symposium

2021
2020-22

Organizer, Educational Data Mining in Computer Science Education (CSEDM) Workshop 2018-22

Organizer, SPLICE Workshops for Computing Education Research Infrastructure:

- "CS Education Research Technology and Data Infrastructure Community Meeting" 2023
- "Building an Infrastructure for CS Education Research and Practice at Scale" 2020
- "Computing Science Education Infrastructure: From Tools to Data" 2019

Publications Chair, Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT) Conference 2015

Leader, CS-SPLICE Working Group on Code Snapshot representation 2021

Conference and Workshop Reviewing:

International Conference on Educational Data-Mining (EDM) PC: 2016-20, 22
Workshops Chair: 2021

ACM Technical Symposium on Computer Science Education (SIGCSE) PC: 2017-19, APC: 2020-22

International Conference on AI in Education (AIED) PC: 2020-21; SPC 2022

International Computing Education Research Conference (ICER) PC: 2021-22

Educational Data Mining in Computer Science Education (CSEDM) Workshop PC: 2018-22

ACM CHI Conference on Human Factors in Computing Systems (CHI) Rev: 2018-21

Conference on Innovation and Technology in Computer Science Education (ITiCSE) PC: 2017-21

BLOCKS+ Workshop PC: 2018

Journal Reviewing:

Journal of Educational Data Mining (JEDM) 2021

International Journal of Artificial Intelligence in Education (IJAIED) 2020

Transactions on Computer-Human Interaction (TOCHI) 2020

Journal of Engineering Education (JEE) 2020

ACM Transactions on Computing Education (TOCE) 2017-20

Computer Science Education (CSE) 2019-20

IEEE Transactions on Learning Technologies (TLT) 2017-19

Computers and Education (C&E) 2018

IEEE Transactions on Emerging Topics in Computing (TETC) 2017

Invited Talks:

Invited Speaker, AAAI Spring Symposium: AI for K-12 Education 2021

Keynote Speaker, Fourth Alice Symposium, Duke University 2017

Memberships:

Association for Computing Machinery (ACM) since 2017

ACM Special Interest Group on Computer Science Education (SIGCSE) since 2017

International Educational Data Mining Society since 2016

International AI in Education Society since 2019

Society for Learning Analytics Research (SoLAR) since 2018

Phi Beta Kappa, national honors society for the liberal arts and sciences since 2014

Departmental Service

Co-leader, NCSU CSC Taskforce on Promoting Diversity and Inclusivity Discussions and Community: Proposed departmental policies informed by surveys and listening sessions with students of color to address systemic barriers to success and wellbeing (2020-Present).

Leader, NCSU CSC Handbook Taskforce: The taskforce has put together a collection of resources to support faculty and staff by explaining departmental policies, requirements and best-practices.

Awards and Honors

Best Paper Awards: Best Experience Report (SIGCSE'22), Best Full Paper (EDM'21), Best Student Paper (EDM'19), Exemplary CS Research Paper (SIGCSE'17), Exemplary Paper (EDM'16).

2021-2022 Person of Exceptional Performance Award, NCSU CSC Department: recognizes faculty or staff who have exhibited truly outstanding performance, contributing significantly to the department's success as role models for what it means to 'think and do the extraordinary'.

2022 Carla Savage "Awesome" Award for Assistant Professor, NCSU CSC Department: recognizes outstanding achievement and special people within the department.

2018 Doctoral Scholar of the Year, North Carolina State University College of Engineering: recognizes a student's overall achievements in research, teaching, outreach, citizenship, leadership, and recruiting.

2016 Outstanding Student Leader, recognized by the national STARS Computing Corps.

Outreach

STARS Computing Corps:

2013 – 2018

Outreach Leader (2013 - 2018): Led monthly middle school CS outreach programs, and designed curricula, for example using Kodu and Minecraft to teach programming and circuitry.

Co-president (2015 – 2017): Managed CS outreach volunteers, organized group meetings, managed a \$10K+ budget and coordinated with school administrators.