Samiha Marwan

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Highlights
- Current PhD student in the Department of Computer Science, North Carolina State University.
- Current Research Assistant in the HINTS Lab at NCSU, supervised by Dr. Thomas Price.
- M.Sc. in Information and Computer Science, The British University in Egypt.
- Strong teaching background for more than 4 years-experience, The British University in Egypt.

Education
- PhD Student in the Department of Computer Science, College of Engineering, at North Carolina State University (NCSU).   **2017** – **Present**
  Research area: Working in the domain of computing education, particularly in developing and evaluating intelligent support features to promote students' learning and affective outcomes.
  Current GPA: 3.95

- M.Sc. in Computer Science, Faculty of Informatics and Computer Science, The British University in Egypt (BUE), Egypt.   **2012** – **2016**
  Thesis topic: Worked in the domain of DNA steganography. Particularly, I introduced a new algorithm combining different cryptography and DNA steganography methodologies to further achieve better data-hiding capacity and high security.
  Grade: A
  GPA: 3.64 (Ranked overall the first on my class)

- B.Sc. in Bioinformatics, Faculty of Computer and Information Sciences, Ain Shams University, Egypt.   **2008** – **2012**
  Grade: Excellent with honors
  GPA: 3.72 (Ranked overall the second on my class)

Publications (google scholar: https://scholar.google.com/citations?user=VVLMPfIAAAAJ&hl=en)

1. **S. Marwan,** M. Chi, T. Barnes, and T. W. Price, "Adaptive Immediate Feedback System in for Block-Based Programming: Design and Evaluation''. Submitted to the Transactions of Learning Technologies (TLT), 2021.
2. **S. Marwan**, P. Shabrina, A. Milliken, I. Menezes, V. Catete, T. W. Price, and T. Barnes, "Promoting Students' Progress-Monitoring Behavior during Block-Based Programming". Proceedings of the 21st Koli Calling International Conference on Computing Education Research [forthcoming] (2021).
3. **S. Marwan**, Y. Shi, I. Menezes, M. Chi, T. Barnes, and 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. *****Best Full Paper Award*****
4. Y. Dong, P. Shabrina, **S. Marwan**, and T. Barnes, ``You Really Need Help: Exploring Expert Reasons for Intervention During Block-based Programming Assignments". In *Proceedings of the 17th ACM Conference on International Computing Education Research* (pp. 334-346), 2021.
5. Y. Dong, **S. Marwan**, P. Shabrina, T. W. Price, and T. Barnes, " 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.
6. 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.
7. T.W. Price, **S. Marwan**, and J.J. Williams, "Exploring Design Choices in Data-driven Hints for Python Programming Homework." Proceedings of the Annual ACM Conference on Learning at Scale. (Work in progress paper), 2021.
8. 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.
9. G.Gao, **S.Marwan**, and T.W. Price. "Early Performance Prediction using Interpretable Patterns in Programming Process Data". SIGCSE Technical Symposium, 2021.
10. **S.Marwan**, T.W. Price, M. Chi, and T. Barnes. "Immediate Data-Driven Positive Feedback Increases Engagement on Programming Homework for Novices." *Educational Data Mining in Computer Science Education (CSEDM) Workshop @ EDM'20*.

11. **S.Marwan** "Investigating Best Practices in the Design of Automated Feedback to Improve Students' Performance and Learning". In Proceedings of the 2020 ACM Conference on International Computing Education Research (ICER), Doctoral Consortium, 2020.
12. P. Shabrina, **S.Marwan**, T.W. Price, M.Chi, and T. Barnes. "The Impact of Data-driven Positive Programming Feedback: When it Helps, What Happens if it Goes Wrong, and How Students Respond". In the fourth Educational Data Mining in Computer Science Education (CSEDM) Workshop at the International Conference on Educational Data Mining (EDM), 2020.
13. **S.Marwan**, 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.
14. **S.Marwan**, A. Dombe, and T. W. Price. "Unproductive Help-seeking in Programming: What it is and How to Address it?". Proceedings of the 25th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2020.
15. T.W. Price, **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.
16. Y. Yao, **S. Marwan**, T.W. Price, T. Barnes, M. Chi, "What Time is It? Student Modeling Needs to Know". Proceedings of the 13th International Conference on Educational Data Mining (EDM) 2020.
17. W. Wang, Y. Rao, R. Zhi, **S. Marwan**, G. Gao, T.W. Price, "Step Tutor: Supporting Students through Step-by-Step Example-Based Feedback". Proceedings of the 25th Annual Conference on Innovation and Technology in Computer Science Education.
18. T. W. Price, J. J. Williams, J. Solyst, and **S. Marwan.** " Engaging Students with Instructor Solutions in Online Programming Homework ". Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems. 2020.
19. **S.Marwan**, J. J. Williams and T. W. Price. "An Evaluation of the Impact of Automated Programming Hints on Performance and Learning". In the fifteenth annual ACM International Computing Education Research (ICER), 2019.
20. **S.Marwan**, 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 24th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE). 2019.
21. Zhi, R., **S. Marwan**, Dong, Y., N. Lytle, T. W. Price and T. Barnes. "Toward Data-Driven Example Feedback for Novice Programming". In the 12th International Conference on Educational Data Mining. 2019.
22. T. W. Price, J. J. Williams, **S. Marwan.** "A Comparison of Two Designs for Automated Programming Hints". Companion Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK19). 2019.
23. 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.
24. 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.

Professional Experience

- o **Research Assistant** at Computer Science department, NCSU   **August 2018 - Present**
    - o Working in HINTs Lab (url: https://hintslab.wordpress.ncsu.edu/) and have some collaborative work with Game2Learn lab (url: eliza.csc.ncsu.edu/about.html).
    - o Mentoring undergraduate students in developing better user interface in block-based programming environment and doing data analysis for users' interactions.

- o **Coordinator** for Introduction to Java Programming (online section) at Computer Science department, NCSU.   **Summer 2018 and Summer 2019**
    - o Responsible for all course aspects: quizzes, labs, lectures, projects and exams.
    - o Coordinating work with TAs to organize grading and office hours to students.

- o **Teaching Assistant** at Computer Science department, NCSU.   **August 2017 – May 2018**
  Modules: Computer Organization and Assembly

- o **Teaching Assistant** at the British university in Egypt (BUE).   **September 2012 – June 2017**
  Modules: Data structures, Introduction to programming**,** Analysis of algorithms
    - o Teaching programming tutorials, and responsible for grading.

Awards and Honors
- Graduate Assistantship ($\approx$ $42,000), North Carolina State University.   **August 2017- Present**
- Best M.Sc. Research Award ($1200), The British University in Egypt.   **October 2016**

Technical Skills
- **Programming Languages**
    - o Java, JavaScript, R, C++, C#, and block-based programming.

Voluntary Work

- Co-leading SPARCS at NCSU- Middle School Outreach   **August 2018 - March 2020**
    - Leading and assisting in teaching middle school students computer science topics like programming and machine learning.
- Pre-K teacher - Ammar Ibn Yassir Sunday School.   **March 2019 - Present**
    - Storytelling teacher for kids (age 4-6).
- Coached teams of undergraduates in ACM/ICPC program.   **May 2013 – May 2015**