List of Top Relevant Publications  
Mark Floryan, Ph.D.

Mark Floryan, Philip I. Chow, Lee M. Ritterband, Stephen Schueller. “*The Model of Gamification Principles for Digital Health Interventions: Evaluation of Validity and Potential Utility*”. Journal of Medical Internet Research 22.6. <https://doi.org/10.2196/16506> (2020). E16506

This paper highlights the latest work from my collaboration with the Center for Behavioral Health Technology at UVa. My colleagues at the UVa medical school (Lee Ritterband and Philip Chow) as well as another colleage from UC Irvine (Stephen Schueller) investigated the use of gamification within mental health apps. By examining the degree to which gamification is applied in this space, we were able to validate the use of a model we developed to measure and operationalize game design techniques within mental health apps. The paper shows that it is possible to use our model to more systematically utilize game design strategies within mental health.

Link to paper: <https://www.jmir.org/2020/6/e16506/>

Nicholas Lytle\*\*, Mark Floryan, Tiffany Barnes. “*Effects of a Pathfinding Program Visualization on Algorithm Development*”. ACM Special Interest Group on Computer Science Education (SIGCSE). Minneapolis, MN (2019).

This paper highlights my ability to involve undergraduate students in research, construct and experimental with new course assignments, and study the efficacy of those assignments systematically. Nicholas Lytle, when he was an undergraduate at UVa, was a teaching assistant for my AI course and helped me develop a new visual version of a pathfinding assignment (implementing and analyzing the A\* algorithm). Later, as a graduate student, we finished analyzing the data and studying the efficacy of students using the program visualization while working on the assignment.

Link to paper: <https://dl.acm.org/doi/pdf/10.1145/3287324.3287391>

Mark Floryan, Toby Dragon, Nada Basit, Suellen Dragon, Beverly Park Woolf. *“Who Needs Help? Automating Student Assessment within Exploratory Learning Environments”.* Proceedings of the 17th International Conference on Artificial Intelligence in Education. Madrid, Spain (2015).

This paper highlights my collaboration with colleagues in my department (e.g., Nada Basit) and across other colleges and universities (e.g., Ithaca College, University of Massachusetts). The work involved developing a model for automatically grading student efforts within ill-defined domains. This has always been a challenge, because these types of educational activities do not have a formally defined solution or solution path. More complex techniques / algorithms can be used to capture the qualitative nature of a student’s work and potentially assign grades, lessening the work of teachers and TAs in larger courses.

Link to paper: <https://link.springer.com/content/pdf/10.1007%2F978-3-319-19773-9_13.pdf>

*\* Indicates undergraduate student author at the time of writing \*\* Indicates graduate student author*