

Creating Serious STEM Games by Combining a Game Platform and Mathematical Software

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Abstract:

The perceived complexity of many engineering courses is partly due to difficulty visualizing or interacting with the underlying mathematics. Traditional game-authoring environments lack STEM-related support, making them ill-suited to build serious games to explore these concepts. To address this issue, we have integrated an external math tool into the Unity game-authoring environment, and tested it by creating a game to teach basic concepts of mobile communications to engineering students. Players of the game had to fine-tune parameters in a simulated spectrum analyzer. We describe how we integrated STEM support for the generic authoring platform that we used, and present results from a pilot test of our game. We believe that this approach is extensible to a wide range of STEM disciplines.

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