SUSP Final Abstract

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STEM Education Revolutionized with Paper Robots

As the number of robots has been increasing in the world, so has their presence in our daily lives. Students are getting exposed to robotics from a younger age and some classes have even started using it as a tool for learning. However, these robots are quite expensive and challenging to make. Our lab has developed a design environment that generates a 2D pattern that an average user can print, cut, and fold to make a 3D structure for a robot. We aim to use this cheap and easy method of fabricating robots to teach middle school students a plethora of math and science topics. We have created robot designs of varying difficulty levels and built them ourselves. We have also developed lesson plans highlighting exciting activities that connect these robots to STEM concepts. We will test these lesson plans on middle school students and enhance them based on the results. This will give us a clear idea about their skill level, curiosity for learning, and what we should deliver accordingly. In using robots to teach math and science, students will be more engaged and interested in the topic as they will be learning by doing. Integrating simple and inexpensive robots into the classroom at an earlier age will give young students a fun introduction to the world of robotics.