A Leap for Mankind: Teaching Procedural Programming to the General Public

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This study aims to address the ongoing need for more STEM professionals in the current workforce by encouraging a focused interest in information technology at an earlier age. This study targets students and participants of all ages that do not necessarily have a programming background.

Game controllers are traditionally used to interact with games; however, instead of using a keyboard setup, we took a more creative approach and implemented the Leap Motion controller. The Leap Motion hand tracking controller will allow our players to interact with our game with motion controls. Moreover, we utilize ScratchX, a drag-and-drop programming language, which aims to introduce children to programming and logical problem-solving in an interactive, easily digestible manner. The application of these technologies will engage the general public through events hosted by the Technology Ambassadors Program.

The Technology Ambassadors Program is an interactive class focused on service learning. TAP provides the opportunity to build a project using different technologies and collectively deliver it through conferences, student involvement, workshops, and outreach events.

Our goal is to introduce our audience to procedural programming through an interactive activity where participants can develop their own simple racing game. We use block coding to help simplify the concepts and create more interest in ITEC for students. Through the interactive drag-and-drop architecture of Scratch, the students will learn how certain algorithms are adopted to create the logic behind a game. At the end of the activity, we hope to ignite a strong curiosity for the computer sciences and demonstrate that everybody is capable of learning how to program. We want to encourage the students to become lifelong STEM learners and begin their STEM journey at an earlier age.

The two technologies used in this project are the ScratchX and Leap Motion. Leap motion is a computer hardware sensor device that supports hand and finger motions as inputs. We use this technology to allow the audience to control their cars in an interactive way by using hand motions along with the leap motion controller.

Our mission is to introduce the general public to ScratchX and Leap Motion to garner interest in Information Technologies, through using interactive and simple teaching techniques that engage the participants. We aspire to also motivate our diverse audiences to learn more about the various opportunities in the field.