

STAR Summer Camp: Say “NO” to Bullying- Virtual Reality Simulation

Professor: Dr. Tanvir Irfan Chowdhury, Computer Science.

Aims: Bullying is a widely prevalent public health and safety issue that can have serious long-term consequences for youth. With the help of Virtual Reality, we are going to create an anti-bullying simulation. In the process, we will learn about Virtual Reality applications using [Unity3D](#) game engine.

Grade: 9-12 (Programming and Mathematics Knowledge)

Faculty Profile:

Dr. Chowdhury is leading the research project: “Say “NO” to Bullying- Virtual Reality Simulation”.



Dr. Chowdhury is an Assistant Professor of Computer Science at Marshall University. His research interest includes Human-Computer Interaction (HCI), specifically, in the areas of Virtual / Augmented / Mixed Reality applications, Computer Graphics, 2D/3D User Interface, Serious Games, Rehabilitation, etc. He is the one of the two recipients of the John Marshall University Scholar Award for Spring 2022 semester. Please visit <https://www.marshall.edu/cecs/profile/dr-tanvir-irfan-chowdhury/> for more information.

Project Description:

Bullying is a widely prevalent public health and safety issue that can have serious long-term consequences for youth. Traditional approaches used to address bullying include changing the school environment, educating the teachers to identify a bully, and educating parents. While these strategies are essential to a comprehensive anti-bullying approach, these approaches typically do not involve the most crucial target audience – students.

Recent development in technology is making the Virtual Reality (VR) system more affordable to the consumers. In this summer we are going to develop a VR “anti-bully” simulation (VAS). What







is the first thing comes to your mind when asked about Virtual Reality Headset e.g., Oculus Rift, HTC Vive. Most of the people answers, “Video Game”! While it is valid answer, there is another term for what we are going to do in this summer, and it is called “Serious Game”. A serious game or applied game

is a game designed for a primary purpose other than pure entertainment. And that’s exactly we are

going to develop. We will create a VR Game simulating at least two “Bullying” situations to teach students the adverse effect of bully.

In this 4-week summer research camp, you will have an opportunity to not only learn about Unity3D game engine but also create your own Virtual Reality Game using Unity3D game engine.

Weekly Activities Description and Learning Objectives:

<i>Week 1: Introduction to Unity3D</i>	
	<p>You will learn:</p> <ul style="list-style-type: none">- Introduction to Virtual Reality (VR)- Introduction to Unity3D Game Engine- Unity3D Development Environment Setup- Sample Unity3D project exploration
<i>Week 2: VR Basics in Unity3D</i>	
	<p>You will learn:</p> <ul style="list-style-type: none">- VR Events and Interactions- VR Locomotion
<i>Week 3: VR Anti-Bully Simulation-1</i>	
	<p>You will learn:</p> <ul style="list-style-type: none">- VR Lighting and Optimization- VR 3D Animation- VR Anti Bully Simulation: Situation-1
<i>Week 4: VR Anti-Bully Simulation-2</i>	
	<p>You will learn</p> <ul style="list-style-type: none">- VR Anti Bully Simulation: Situation-2- Prototype Testing