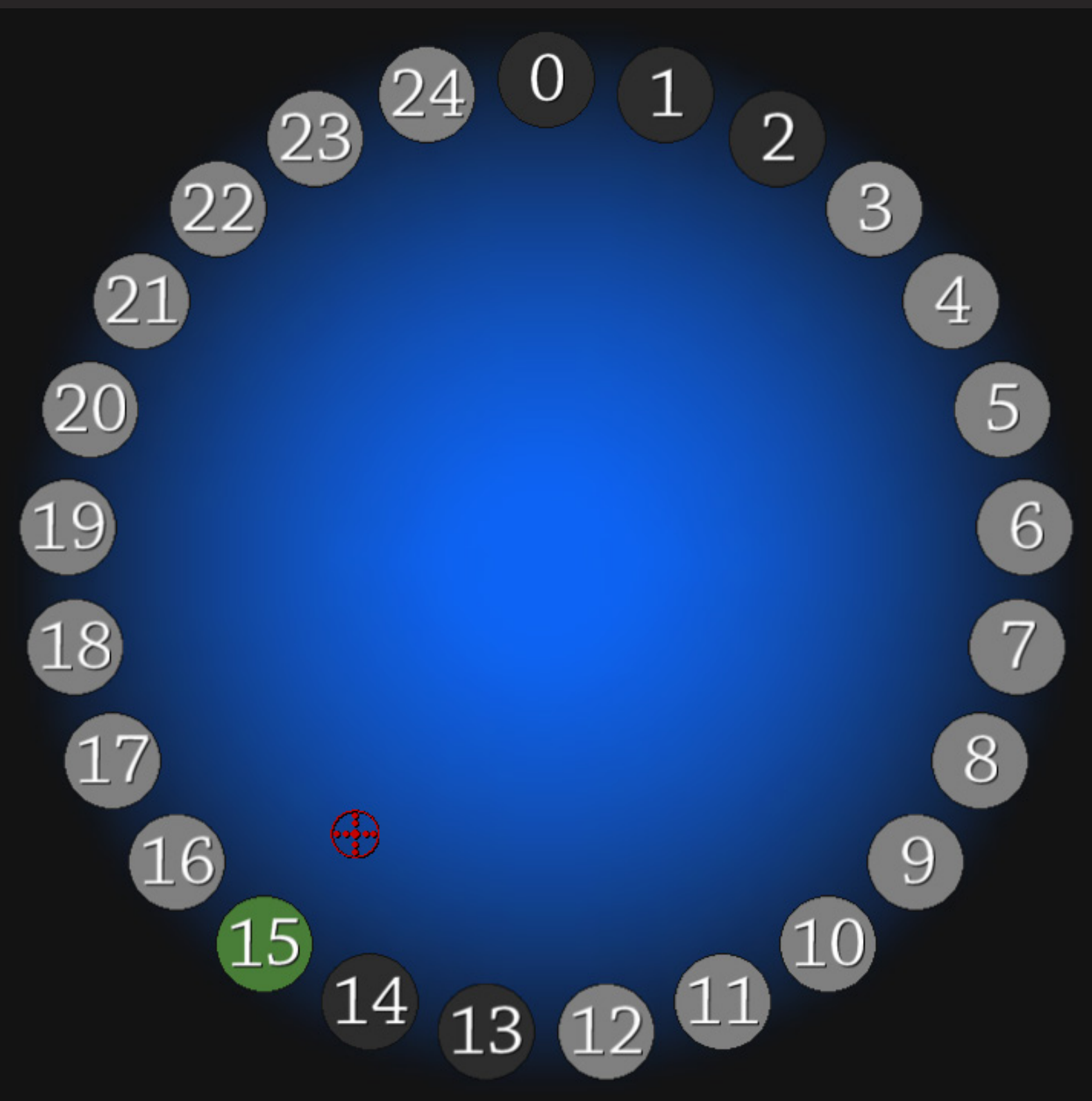


DETERMINING THE EFFECTIVENESS OF ALTERNATE CONTROLLER INPUTS FOR AIMING IN VIDEO GAMES

CS4995 – INTERACTIVE HUMAN-CENTERED SYSTEMS COURSE PROJECT
RAPHAEL BEAULIEU AND ELLIOT COY

MOTIVATIONS

- Existing controllers use analogs stick but are not as fast and accurate as a mouse for targeting.
- Valve created a new touchpad controller for targeting, could it be faster and more accurate than an analog stick?
- Are there other designs that could also be faster and more accurate?



OUR SOLUTION

- We developed a trackball controller that we believe will perform better than the analog stick due to the increased precision of the trackball.



Pictured above: Modified Xbox Controller (Trackball)



Pictured left: Xbox Controller (Analog Stick)

Pictured right: Steam Controller (Trackpad)

EVALUATION

- We compared an Xbox 360 controller, a Steam Controller, and our trackball prototype controller in 2 different tests in a typical console setting.
- The first test is Fitts’ task, implemented in GameMaker: Studio, which we used to determine throughput of a controller. Higher throughput and lower error rate indicates higher accuracy.
- The second test is a real-world trial of the controller using the timed training course from the video game *Counter-Strike: Global Offensive*. Lower completion times and lesser ammo use indicates better control.

Results Graphs
To Be Posted Here

Results
Text
To Be Posted
Here



Resources Used
<http://xim4.com/community/index.php?topic=20482.0>
<http://www.yorku.ca/mack/FuturePlay1.html>
<http://www.yorku.ca/mack/FuturePlay2010-2.pdf>
Special thanks to Max Falkjar for helping to manufacture the prototype controller