

Explore – Impact of Computing Innovations

Written Response Submission Template

Please see [Assessment Overview and Performance Task Directions for Student](#) for the task directions and recommended word counts.

Computational Artifact

2a)

The computing innovation presented is an AR-assisted robotic 3D printer. The purpose of this machine is to make more accurate models of products and, simultaneously, ease the sometimes tedious job of designers. My artifact uses a video and a narration to demonstrate the innovation and explain its works. The artifact also touches on effects.

2b)

To create the artifact, I downloaded the referenced youtube video by the person who worked with the innovation directly. Then I imported the video into Adobe Premiere Pro and sped it up to fit the 1 minute requirement. After unlinking audio and video I removed the original audio, recorded my narrations and then saved the result. I wrote no scripts prior so I was narrating on the fly using my gaming headset with a built-in microphone.

Computing Innovation

2c)

This robotic modeling assistant will let designers make more accurate models and base them around real objects (such as the handle around a physical finger) instead of half-guessing at the shape. This innovation should also let production start quicker since the development and design is quicker.

The drawback is that the robot is intuitive, almost anyone can master it. That is both the beauty and the curse of it - now one or two designers can do what previously required a team. This means either less pay for the designers or less jobs. Either way, the robot is excellent for the companies but not so good for the employees.

2d)

As can be seen in the artifact, the robot analyzes the objects the pointer is pointed at. In the example, it analyzed the shape of the designer's hand and computed points to be printed off that data. All that was done fairly quickly, implying that there was some formula or relation that was used to speed up the process. The machine isn't connected to the Internet so there is no hacking concern but I imagine that as this technology becomes more widespread it will be connected to the Web and thus will require some security.

References

2e)

Video used for background: https://www.youtube.com/watch?v=K_wWuYD1Fkg

Other sources:

<http://www.huaishu.me/projects/roma.html>

<https://www.3dprint.com/204024/roma-interactive-fabrication/>

<https://www.geeky-gadgets.com/roma-robotic-fabrication-assistant-22-03-2018/>