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Mr. Speice

Independent Study Mentorship 2A

25 September 2019

Watching the World Through a Computer

Assessment 3 - Research Assessment

Date: 25 September 2019

Subject: Introduction to OpenCV and Computer Vision

Works Cited:

"Real-Time Computer Vision with OpenCV." Communications of the ACM, vol. 55, no. 6, June

2012, pp. 61–69. EBSCOhost, doi:10.1145/2184319.2184337.

Assessment:

Computer science is a very broad topic with several subtopics. One cannot possibly think

about pursuing all the topics in the field. However, my interest has recently been sparked by the

subtopic of computer vision: the idea of looking through the world through the lens of a

computer. Computer vision is found all throughout the world with applications in several areas.

With this in mind, choosing a project will be much easier because of the wide variety. Not only

will I be able to choose a project that is solely in the field but I can choose a project in a field that

I am interested in and pertains to me.

In the article "Real-Time Computer Vision with OpenCV," the author gives an in-depth

analysis of how the GPU and CPU both contribute to image processing. While this pertains more

to the hardware side of image processing, this will be essential to know when developing a

product because it will allow me to resolve any problems such as laggy image processing. In the

situation in which these problems arise, finding a solution will be much easier because of my new-found knowledge regarding using programming to control the GPU and CPU to yield faster results.

In order to yield the best results when using computer vision, the computer must have large amounts of data that can be analyzed and merged into one. This is especially important for my artificial intelligence projects because, without this knowledge, the end scenario of my original work or final product would likely be a project that cannot work because of the lack of data it has to analyze. To avoid such a scenario, I can plan ahead to gather large amounts of data and, as a result, increase the accuracy of the application. Additionally, the article explains the different stages of image processing starting from rectification to speckle filtering and this is infinitely useful in helping me plan and design my program ahead of time. By outlining different parts of my program, reworking errors in the application in a more modular basis increases work efficiency. Collectively, both of these aspects of my research allow me to ensure that I plan ahead and overcome any obstacles that may occur when working on my project.

Incorporating computer vision with mobile devices was something that I had not thought about. However, after having gained more knowledge about computer vision in mobile applications, this is something to be considered. By discovering this, newly sparked interest has caused me to consider implementing a mobile version of my original work or final product in order to keep up with the shift to an all-mobile society.

Building the perfect computer vision application is oftentimes difficult. In order to ease the process for my own journey in ISM this year, I must take everything into account starting from the specific field I want to address using computer vision to any extensions to my project

such as a mobile version. By planning both technical and nontechnical aspects of my journey, I

can ensure myself a smoother road as I start watching the world through the lens of a computer.

Annotations:

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