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CSCI 332 40

29 September 2020

<div align="center">Advances Through Impartiality</div>

Intellectual properties, as they relate to computer science has long been a divisive and controversial topic. There exist endless arguments for the benefits of (or detriments to) private ownership versus public availability, many of which are rooted in their impacts on society as whole, drive for capitalism, and effects on creativity. Many other considerations can be observed, however ultimately there is no answer that is more correct than the next when evaluated on a macro level and not within the confines of one specific circumstance or endeavor. In other words, a balance of these controversial ideologies must be realized for continued advancement within the field of computer science.

The number of approaches or implementations to achieve a programmatic objective are as countless as the specific applications of licenses and copyright law that govern their usage. For the purposes of this argument, we'll simplify the opposing standpoints into two broad categories: those that believe all software should be open source and universally available, and those that believe that doing so would economically stagger technology focused companies and individuals. The driving force between each can also be restated as a pursuit for public knowledge and conversely, a pursuit for private wealth. To that extent, I propose that one cannot exist without the other and neither should be viewed as wholly idealistic.

Society operates within the constructs of modern capitalism, that is to say that most people expect compensation for their work. If the overarching goal of computer science is

continual growth and development within the field, by making all software free and available for the public domain, many programmers would simply find that it is not personally feasible from an economic standpoint (and therefore not contribute their efforts). The result is an impediment to advancement within computer science and is counterproductive for the 'pursuit of knowledge' group. Conversely, if all computer related code, algorithms, and design were privately owned, the result is still similar—advancement would be impeded. While certainly applicable to developers, as a student in particular, it is these open source projects that are instrumental for studying, learning, and experimenting by way of what others have done. Much of this process is cyclic within the workforce as well, each programmer further building upon what others have previously achieved. Collaboration, even if not in parallel, is a key fundamental to these ends; without it there would be no progression and the 'pursuit of wealth' group would have nothing new to sell. Each of these polar viewpoints have differing objectives, but they work in concert to elevate computer science as a whole. They are different sides of the same coin.

As computer science professionals, it is perhaps more important to understand the ethical and moral considerations as it relates to the controversy of intellectual property. The *ACM Code of Ethics and Professional Conduct* and the *IEEE Code of Ethics* provide guidance that is useful in establishing the aforementioned balance, while promoting equal favor for all involved parties. Specifically, the *ACM Code of Ethics and Professional Conduct* states that "developing new ideas, inventions, creative works, and computing artifacts [create] value for society" (ACM Code of Ethics and Professional Conduct, 2018). Notably, it does not define value, but can be interpreted in a way that corresponds with both opposing pursuits previously discussed: value in terms of knowledge, and value in terms of economy. The *IEEE Code of Ethics* supplements this concept with Principal 1.02, "moderate the interests of the software engineer, the employer, the

client and the users with the public good" (IEEE Code of Ethics, 2020). The operative word

being "moderate," as in striking a successful balance of your work in a manner than benefits not

only yourself, but both the public and private sectors alike. Again, this echoes both pursuits and

emphasizes ownership (or lack thereof) as a multifaceted topic, not a one-sided debate. The

ultimate goal, no matter the individual intent or perspective for how information should be

controlled, is to serve the greater good for all parties involved. In order to achieve this, all

ideologies are valid, yet must coexist if we are to continue to make sustainable and significant

advances within the field.

Works Cited

 "ACM Code of Ethics and Professional Conduct." *ACM.org,* 22 June 2018,

      <http://www.acm.org/about-acm/acm-code-of-ethics-and-professional-conduct>.

      Accessed 29 Sept 2020

"IEEE Code of Ethics." *IEEE.org,* June 2020,

      <https://www.ieee.org/about/corporate/governance/p7-8.html>. Accessed 29 Sept 2020