

Matt Ritchie

CS 456 - Ethics

Exam 1 Pt. 1

In the self-regulating software industry, professional Computer Science organizations, such as the ACM and IEEE, work like flag bearers. They are leader figures of sorts that display and encourage the set of ethics that the majority of Computer Science practitioners seem to have an unspoken agreement upon. If this unofficial agreement was turned into an enforced standard, there would definitely be some advantages, but I believe the disadvantages outweigh them, not to mention the effort to set up whole system of enforcement or even licensing. Certainly the advantages to a licensing system include a guarantee to employers that a new applicant has the ability they are expecting, similar to the way a college degree works on your resume. This would also benefit licensed software developers in that they might get higher pay from the start because their license proves they are a cut above the rest. In addition, societal perception of careers is greatly improved by having a certification, people think 'he/she must be good at what they do because they have a license'. Unfortunately, the instant you set the bar to any level you discriminate against those under it. Because algorithms and programs "are also being used to make big decisions about people's lives, such as who gets loans, whose résumés are reviewed by humans for possible employment," capable developers wouldn't make it onto the 'short list' just because they don't have an official license (1). This won't affect liability, however, because a licensed expert can make a mistake just like an amateur can, and both should take responsibility for any damages their bugs may cause, though bugs should happen a bit less often from the expert. The only way to reduce the actual liability is to have your code reviewed by a third party before releasing it, so that if a bug slips through after an extra check then you aren't solely to blame. The drawback of doing this, however, is not just the extra delay it takes for the check, but the potential leak of trade secrets and other valuable information to those outside your company.

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Transitioning to a mostly open source software community, such as one based on the MIT version of a common license, would have several profound effects on the community. I believe the creation of new software would be stifled as most developers would become unmotivated to produce new things, due to the lack of a guaranteed return on their investments. But in return, there would be a surge of variations of existing software highly customized to user's preferences, since the 'base' software can be amended or upgraded by those that know how, in order to fine tune it to their individual tastes and needs. However, if those users with the customized software in turn distribute it to others, the market will become confusing as it gets flooded with variations of similar software. The worst part about it would be the ease you could inject some malware into the software and offer it to the masses, like a poisonous needle in a haystack. Under the MIT license you can't even get in too much trouble for doing so because it directly states that "IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE"(2). Economically, basing most of the software community off of the MIT license would not be feasible. There are a few advantages, such as companies getting more users and publicity (which promotes popularity), and the users getting their software cheaply. On the other hand, the businesses would take a gamble because their profits per copy would drop like a rock, but then they would be able to distribute more copies. In addition, anyone who acquires the software from the company can then modify it and distribute it themselves, flooding the market as mentioned earlier. Therefore, how would the employees of the original companies get paid? I don't think we could sustain the current amount of software developers in the workforce. Societal 'benefits' are mostly in the negative under the MIT license, as the lack of guaranteed return on investment makes developers unmotivated to produce since there's no profit in it. From the companies' view it would be much more cost effective to just upgrade someone else's work to suit your needs. Additionally, I believe software developers and companies should have a right to current intellectual property protections, at least for the time being, as a sudden shift would be catastrophic to the software community. And of course, classified work commissioned by the government would never be held to the rules of the rest of the mass-distributed software.

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1. *Toward Algorithmic Transparency and Accountability*, Simson Garfinkel, Jeanna Matthews, Stuart S. Shapiro, Jonathan M. Smith (ACM - 9/17)
2. <https://mit-license.org/>