

**08-732 Law of Computer Technology. Prof. Shamos  
Homework 3 MODEL ANSWERS**

**1. Fair Use [60 points].**

Giphy is a startup on its way to becoming a unicorn – a private company worth \$1 billion or more. You should visit its [website](#). What you will see is a search bar that enables you to find animated GIFs. When you type keywords into the search bar, you will receive hits which you will see moving. If you want to download one to your machine, click on it, then select “Advanced.” One of the options is “Gif Download.” If you click the “Download” button, the GIF will be downloaded to your computer.

Giphy was founded in 2013 and now allows users to post, embed and share GIFs on Facebook. It is integrated with Twitter and serves over 1 BILLION GIFs per DAY. Giphy has no revenue but is worth \$600 million.

It should be apparent that Giphy may be facing copyright problems. You can read about that in an [article](#) from Fortune magazine. (In case there’s anything wrong with the previous link, a .pdf copy of the article (without live hyperlinks) is [here](#). The article mentions that no court has yet determined whether sharing of GIFs is a fair use under 17 U.S.C. §107:

**... the fair use of a copyrighted work ... for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include—**

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;**
- (2) the nature of the copyrighted work;**
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and**
- (4) the effect of the use upon the potential market for or value of the copyrighted work.**

Obviously, Giphy maintains a huge searchable database of GIFs. For most of them, Giphy does not have permission of the copyright owner to store, index, or serve them. Some are uploaded by users. However, Giphy then indexes them, stores them in its database and makes it easy for users to download them, share them, include them in web pages, etc.

All of the facts stated above are true. Now assume that Universal City Studios (“Universal”) discovers that 25,000 of its GIFs are in Giphy’s database without

permission and sues Giphy for copyright infringement. Giphy asserts that everything it is doing is a fair use.

Universal also argues that Giphy users who download, share, post and incorporate Universal's GIFs into web pages are copyright infringers and that Giphy induces and contributes to that infringement by providing the GIF index, allowing downloads, and giving users instructions on how to share GIFs. The principle of contributory copyright infringement was explained by the Supreme Court in [\*Sony Corp. v. Universal City Studios\*](#), 464 U.S. 417 (1984), which we discussed in class. The Court wrote:

*The Copyright Act does not expressly render anyone liable for infringement committed by another. ... The absence of such express language in the copyright statute does not preclude the imposition of liability for copyright infringements on certain parties who have not themselves engaged in the infringing activity. For vicarious liability is imposed in virtually all areas of the law, and the concept of contributory infringement is merely a species of the broader problem of identifying the circumstances in which it is just to hold one individual accountable for the actions of another.*

During the lawsuit, Universal discovers that its GIFs have been downloaded by Giphy users over 10 million times and have appeared on at least 50,000 web pages. Universal's theory is that even if Giphy is right that Giphy itself is making fair use of the GIFs, a large number of Giphy users are not fair users but copyright infringers, and therefore Giphy is liable for those infringements as a contributory infringer. (Assume that Universal can prove that at least some Giphy users have made use of Universal GIFs in ways that are not protected as fair uses.)

In this question you are not to consider any possible effect of 17 U.S.C. §512, relating to the liability of service providers for material posted at the direction of users. You should assume that section does not apply to Giphy.

Question 1A [40 points]. Is Giphy a fair user of the Universal GIFs? You must at least discuss all four fair use factors.

**Note at the start that Giphy's purpose is not criticism, comment, news reporting, teaching, scholarship, or research, but this is not the end of the inquiry.**

**The four fair use factors:**

**(1) purpose and character of the use.** Giphy's purpose is clearly commercial, as it is trying to build a business that will be worth over \$1 billion, and they're 60% of the way there. They have not transformed the GIFs, but they have created an information locating tool. Overall, this factor goes against Giphy.

**(2) nature of the copyrighted work.** The animated GIFs are fanciful works of art, hence more fictional than factual. This factor goes against Giphy.

**(3) amount and substantiality of the portion used.** Giphy stores and serves entire GIFs. This factor goes against Giphy.

**(4) effect of the use on the potential market or value. Universal has lost control of its GIFs. It will be unable to market them if a free source like Giphy is available. It doesn't matter whether Universal is currently licensing the GIFs because the factor looks at the "potential" market. This factor goes against Giphy.**

**With all of the four factors against Giphy, their use is not fair. It's important to understand the difference between what Google does, which was ruled fair in *Authors Guild v Google*, and what Giphy does. Google copies entire books and indexes them, but for copyrighted works only provides "snippets," usually a few sentences. The Second Circuit (upheld by the Supreme Court) said: "The purpose of the copying is highly transformative, the public display of text is limited, and the revelations do not provide a significant market substitute for the protected aspects of the originals. Google's commercial nature and profit motivation do not justify denial of fair use." In contrast, Giphy provides entire GIFs, which would be analogous to Google providing entire books, an activity that surely would not have been fair.**

Question 1B [10 points]. Is Giphy responsible for copyright infringements committed by Giphy users? You should consider the Supreme Court's reasoning in the *Sony* case.

**A Giphy user who makes fair use of a GIF is not an infringer, so Giphy cannot have contributed to that non-existent infringement. Some of the *Sony* analysis is applicable here, but most is not. More relevant is the *Authors Guild v. Google* case, which also does not apply directly. In *Authors Guild*, the Second Circuit wrote: "We recognize the possibility that libraries may use the digital copies Google created for them in an infringing manner. If they do, such libraries may be liable to Plaintiffs for their infringement. It is also possible that, in such a suit, Plaintiffs might adduce evidence that Google was aware of or encouraged such infringing practices, in which case Google could be liable as a contributory infringer. But on the present record, the possibility that libraries may misuse their digital copies is sheer speculation. Nor is there any basis on the present record to hold Google liable as a contributory infringer based on the mere speculative possibility that libraries, in addition to, or instead of, using their digital copies of Plaintiffs' books in a non-infringing manner, may use them in an infringing manner."**

**In our case, unlike in *Authors Guild*, Universal has evidence of direct infringement by Giphy users 10 million times, since all the downloads were without Universal's permission. Giphy is liable to Universal for provable infringement by Giphy users.**

Question 1C [10 points]. I posted an article about Giphy on my course web server. (Links to the original article AND to my copy of it were given above.) I know that it will be downloaded multiple times, and the course website is not protected or limited to students in the course. It can be accessed by anyone. Is it a fair use for me to maintain a copy of the Fortune magazine article on my server?

**My use is for teaching, but it is necessary to go through the four fair use factors: (1) purpose and character of the use. The course website is non-commercial and supports teaching activity. This factor favors me.**

**(2) nature of the copyrighted work. The Fortune magazine article is primarily factual, which favors me.**

**(3) amount and substantiality of the portion used. I used the entire article, which favors Fortune.**

**(4) effect of the use on the potential market or value. Fortune does not sell copies of its articles separately, and even posts them on its own website (which is where I got the article). It is not reasonable for a faculty member to require students to buy a copy of a whole magazine just so they can read one short article, and in any case the articles are not sold that way. No one who was going to buy that issue of Fortune would be satisfied by one online article, so the effect on the market for and value of the work is negligible. This factor favors me.**

**With three of the four factors favoring me, the use is probably fair. Some students pointed out that I could have restricted access to just those enrolled in the course, or just members of the CMU community. This would have made the argument for fair use stronger.**

## **2. Trade Secrets and Copyright [60 points].**

Carl Coder is a programmer for Photosnoop<sup>1</sup>. He signed a standard employment agreement in which he agreed to treat the company's trade secrets as confidential and not disclose them or use them for any purpose whatsoever except his assigned job. Photosnoop wants to create software that finds unauthorized copies of photos and videos on the web so that its customers can tell if their copyrights are being violated. It provides a spider that hunts the web and, using a secret algorithm, creates digital "fingerprints" of media files that it finds on webpages and compares them with a database of fingerprints of the user's own media. If a match is found, then with high probability the file it discovered was derived from one of the user's files and is likely a copyright infringement. The algorithm is clever because it will detect matches even if the original media has been modified, for example, if the video format has been changed from .mp4 to Quicktime. Assume that no other company knows the algorithm and that Photosnoop has been very careful not to disclose it to anyone other than a small number of its employees who are directly involved in software development.

Photosnoop discloses the algorithm to Carl and asks him to write Python code to implement it. Carl does a lot of research and creates a system using code from three different sources:

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<sup>1</sup> The company is fictional.

- a. Carl obtains 20,000 lines from GitHub to perform various tasks such as spidering, indexing and database access. Assume that his use of this code is permitted, but Photosnoop does not know that he used it. GitHub ([www.github.com](http://www.github.com)) is a site for software developers that allows them to upload and download open source software. The GitHub “Terms of Service” are available by clicking on a link on the GitHub home page. One provision is: “By using the GitHub.com web site (‘Service’), or any services of GitHub, Inc (‘GitHub’), you are agreeing to be bound by the following terms and conditions (‘Terms of Service’). IF YOU ARE ENTERING INTO THIS AGREEMENT ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY, ITS AFFILIATES AND ALL USERS WHO ACCESS OUR SERVICES THROUGH YOUR ACCOUNT TO THESE TERMS AND CONDITIONS, IN WHICH CASE THE TERMS ‘YOU’ OR ‘YOUR’ SHALL REFER TO SUCH ENTITY, ITS AFFILIATES AND USERS ASSOCIATED WITH IT. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, YOU MUST NOT ACCEPT THIS AGREEMENT AND MAY NOT USE THE SERVICES.” Carl does not have the authority to bind Photosnoop and therefore his use of GitHub violated the Terms of Service.
- b. Carl searches the Internet and finds some digital fingerprinting code from a website called *fingering.com*<sup>2</sup>, which he copies verbatim into his system. Assume that his use of this code is a copyright infringement and Photosnoop does not know that he used outside code.
- c. For the matching module, Carl writes original code based on the algorithm that was disclosed to him in confidence.

Carl finishes the job successfully and Photosnoop is very happy with his system. Carl is also proud of his code and uploads all of it to GitHub, where it becomes available to all programmers who have signed up with GitHub.

Huntapic<sup>3</sup>, a competitor of Photosnoop, is working on a similar system. Frank Finder, a programmer at Huntapic, visits GitHub to see if he can locate any useful code, and discovers Carl’s system. He copies the code, changes all the variable names and converts it to Java. Huntapic does not know that he obtained the code from an outside source. Huntapic releases Frank’s system and advertises it, giving a brief description of its matching algorithm. Photosnoop becomes very suspicious and sues Huntapic and Frank for copyright infringement and misappropriation of trade secrets. When the facts become known about what Carl did, Photosnoop fires Carl and also sues him for copyright infringement and misappropriation of trade secrets. Assume that all of this activity took place in a state that follows the Uniform Trade Secrets Act (relevant portions reproduced below).

1. Huntapic says it had no idea that Frank was going to copy anything from GitHub and therefore it did not misappropriate any trade secret.

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<sup>2</sup> The company is fictional.

<sup>3</sup> The company is also fictional.

2. Frank says he had no way of knowing that the code on GitHub included any trade secrets. Therefore he did not misappropriate any trade secrets.
3. Fingering.com sues Carl and Photosnoop for copyright infringement. Their defense is that fingering.com made its code available on the Internet for anyone to download.
4. Photosnoop says that its trade secret has been destroyed because Carl's code on GitHub disclosed the trade secret to the whole world. Furthermore, Carl must pay for the value of Photosnoop's lost trade secret. Carl's defense is that any computer scientist could have developed Photosnoop's algorithm and therefore it was "readily ascertainable" and not a trade secret.
5. Photosnoop says that it owns the Python code written by Carl, and that Frank is a copyright infringer because he copied it and also made a derivative work by translating it into Java. Frank says he had no way of knowing that the code on GitHub was copyrighted and thought it was freely available as open source.
6. Photosnoop says that Huntapic is a copyright infringer because it distributed Frank's Java system, which was a derivative work of Carl's code, to its customers. Huntapic says it is innocent because it did not know what Frank did, did not know the origin of the code, and had no way of knowing that Photosnoop owned the code.

Question 2 [60 points]: Evaluate arguments 1-6 above and explain who is liable and who is not liable in each case and why. You should not need more than half a page for each answer.

**The key issues in this question are: (A) Can someone infringe a copyright without knowing that he is doing so, that is, innocently? (B) Can someone misappropriate a trade secret without knowing that he is doing so? (C) When can an employer be responsible for unauthorized acts of its employee? The answers to (A) and (B) are different. The copyright law imposes no requirement of knowledge of infringement, although willful (deliberate) infringement involves greater damages and possibly attorneys' fees. The Uniform Trade Secrets Act contains an express knowledge requirement: "knows or has reason to know that the trade secret was acquired by improper means." This is going to lead to different results depending on whether copyright or trade secret is involved.**

**Regarding (C), Oliver Wendell Holmes observed, "[i]n tort, masters are held answerable for conduct on the part of their servants, which they not only have not authorized, but have forbidden." This was discussed in the Dobash article that was cited on the course web page. The general rule of respondeat superior is that the employer is liable for acts committed by its employee "within the scope of employment." Even prohibited acts can be within the scope of employment if they are of a type normally performed by the employee and motivated at least in part by the purpose of serving the employer.**

**If an agent (employee) commits a tort, both he and the principal (employer) are liable. Respondeat superior adds liability for the employer – it does not protect that employee. Usually individual employees who commit torts don't get sued because they don't have significant money – it's much more profitable to sue the employer.**

**The GitHub terms of use state that anyone who posts code on GitHub is granting permission for others to view the code, not necessarily to copy it or include it in other products.**

**Carl is the bad guy here. He has probably destroyed Photosnoop's trade secret algorithm by posting an implementation of it on GitHub. By copying code from GitHub and including it in Photosnoop's product, he has exposed Photosnoop to liability for copyright infringement from the owner of the GitHub code. By copying code from fingering.com, Carl exposed Photosnoop to liability for copyright infringement from the owner of that code.**

**Carl had no authority to bind Photosnoop to GitHub's terms of use. However, the fact that Carl violated the terms of use does not affect any of the answers to the questions below.**

**Now we can answer the questions in sequence.**

- 1. Frank did not know and had no reason to know that the algorithms in the code Carl posted on GitHub were acquired by improper means. Further, by the time Frank found the code, any trade secrets had probably been destroyed by public exposure. (It is occasionally possible to "recover" a trade secret that has been revealed if prompt action is taken, but there is no evidence of that here.) If Frank did not misappropriate a trade secret, then his employer Huntapic didn't either. Frank is not entirely honest, but he is not involved in any trade secret misappropriation.**
- 2. (Questions 1 and 2 are closely linked.) Frank did not know and had no reason to know that the algorithms in the code Carl posted on GitHub were acquired by improper means. Further, when Carl posted the code, it was not the subject of efforts reasonable under the circumstances to maintain its secrecy. Also, any trade secrecy was destroyed by Carl's post. Therefore, Frank did not misappropriate any trade secrets.**
- 3. Carl is liable to fingering.com for copyright infringement. Just because fingering.com posted its code does not entitle anyone to copy it any include it in their products. Carl's employer, Photosnoop, is also liable to fingering.com under respondeat superior. It doesn't matter whether Photosnoop was aware of the infringement – it benefitted from it and must compensate fingering.com and stop infringing.**

**4. The issue of fact is whether the Photosnoop algorithm is “readily ascertainable.” On the facts we have been given, this is unlikely. There is no evidence that anyone else published the algorithm or that it was known to others. Photosnoop protected it, and Carl does not explain which aspects of it would be readily ascertainable. Carl has destroyed Photosnoop’s trade secret and is liable for its value. Unless Carl is very rich, though, Photosnoop will not be able to collect that value from Carl.**

**5. Frank is a copyright infringer. There is no requirement that he have knowledge that the code he copied was protected. Even the GitHub terms of use only give Frank the right to view the code, not copy it or make derivative works.**

**6. Huntapic is a copyright infringer because it copied (through its employee Frank) and made a derivative work of code that was owned by Photosnoop. Even if Huntapic had a policy against use of GitHub code (we were not told that), it is still liable for Frank’s copyright infringement.**

#### **Uniform Trade Secrets Act**

**(1) “Improper means” includes theft, bribery, misrepresentation, breach or inducement of a breach of duty to maintain secrecy, or espionage through electronic or other means.**

**(2) “Misappropriation” means: (i) acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or (ii) disclosure or use of a trade secret of another without express or implied consent by a person who (A) used improper means to acquire knowledge of the trade secret; or (B) at the time of disclosure or use knew or had reason to know that his knowledge of the trade secret was (I) derived from or through a person who has utilized improper means to acquire it; (II) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or (III) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or (C) before a material change of his position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.**

**(4) "Trade secret" means information, including a formula, pattern, compilation, program device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.**