To: Travis Margoni

From: Writing 3015 Team 1

Date: October 29th, 2014

Subject: A new interdisciplinary journal that combines CS and the humanities

The purpose of this memo is to introduce a disciplinary dialogue of the intersection between Computer Science and Humanities. The principal investigators of this journal include Jackson Murphy, Gregory Anderson, Meher Samineni. (should we include zach’s name?) This memo includes the following information:

1. Introduction
2. Connection between Computer Science and Humanities
3. Section 1: Ethical and Philosophical Issues in Computer Science
4. Topic 2
5. Topic 3
6. Conclusion

Introduction:

-purpose of this memo

-maybe introduce our hypothetical selves “University of Utah

students who, not necessarily affiliated with the U of U itself, want to create and begin an

interdisciplinary journal (periodical) tied to the humanities and to the mission of the Utah

Humanities Council to improve Utah “communities through active engagement in the

humanities”

-connection between Computer Science and Humanities

CS Scholarship and Disciplinary Analysis

CS scholarly writing seems to primarily take place in research journals. Beyond original research, these journals commonly accept guest editorials, opinion pieces, proposals of new theories, and review articles of previously published papers. Some also feature book and software reviews. Judging by article length, the “most valued genres” are original research, reviews, and new theory proposals. The latter two might be justified when you consider that theory often fuels research, and reviews are helpful in determining future research directions. Today’s hot research topics probably come as no surprise: Artificial Intelligence, the Internet of Things, Big Data, and Cryptography (to name a few). As for my interests, I’m intrigued by all these areas but frankly, I’m not ready to commit to just one. Some journals that grabbed my attention were the International Journal of Neural Systems, MIS Quarterly, and IEEE Communications Surveys and Tutorials, all of which have extremely high impact factor scores (which is itself another discussion). In reading some technical articles, I was struck by how plain the language was in the intro sections, how each technical term was clearly defined. A strong math background is a must for many of these articles, but the researchers are evidently trying to make their work as accessible as possible.

Though not a perfect measure of excellence, the impact factor is often equated to a journal’s prestige. It’s determined by how often a journal’s articles are cited by others. The Computer Science publications with the highest impact factors include the Journal of Statistical Software, IEEE Transactions on Evolutionary Computing, and the International Journal of Neural Systems. These journals had similar submission guidelines for article length, format, and quality (e.g., they strongly recommend you have a colleague revise your manuscript before submitting it). Some journals’ guidelines are more specific than others’, and some have a longer maximum page length. Most use the IEEE or CSE style guides. Now, on to the interdisciplinary journals. Computer Science has obvious application to many fields, so it’s no surprise that there are a lot of them. According to impact factor, the most prestigious are Computer-aided Civil and Infrastructure Engineering, MIS Quarterly, the Journal of Computational Physics, and of course, Science. In these journals the target audience is still a highly technical one. (Though in some other journals I found, like the Journal on Computing and Cultural Heritage, that wasn’t so much the case). All these publications are peer-reviewed. Their editorial boards tend to have both computer scientists and experts in the other fields relevant to the journal’s content. Many hold positions at universities, but a fair amount worked instead in corporate research departments (such as Microsoft’s and Google’s). In the journals above, most of the articles are quantitative research or reviews. I checked out the current issue of Computer-aided Civil and Infrastructure Engineering. The articles ranged between 10 to 20 pages in length. Save for one article, it was way over my head (most of the articles dealt with advanced wave physics).

The main type of scholarly writing in CS/Engineering is Research. Research type of writing is basically the expansion of a person’s research. Sometimes reaction papers are also utilized as a way to react to case studies or incidents. This type is usually designated more in a classroom setting than in a formal journal. For example, a professor might ask a student to write a reaction paper on Challenger or the Bhopal Incident.

In CS, the type of genres valued include research proposals, research methods, research discussions, research abstractions, dissertations and theses, Case Studies, and lastly Reports. These genres are scientific writing, so clear objectives are always given. The writing is very pointed, makes the subject clear, and any assumptions or opinions are expected to be reasoned/backed with evidence.

Since CS is a relatively young field, almost any current research is considered hot topic. However, I think that these are some that intersect with multiple subjects: Biometrics, Machine Learning, Parallel Programming, Quantum Computing, AI (artificial intelligence), Data Mining and Big Data, RSA Encryption and Cryptography, Cloud Computing. I’m personally interested in Biometrics and its intersection with finding better cryptography and encryption algorithms. I’m also very interested in AI and Robotics.

IEEE is the expected citation style used in Engineering/CS journals. Some highly valued journals that I have used in any research I’ve performed include IEEE Computer Society, ACM Computing Reviews, Journal of Artificial Intelligence Research, and the International Journal of Robotics Research. Many of the publications and journals emphasize purpose, specific language, and conciseness. Clarity is highly valued as is evidence based research. In most articles, there is a clear organization with the purpose stated initially, then evidence given about current research, future projection of specific technology, and usually sustainability of the technology. Any illustrations given are usually data based and cited in IEEE.

The most common type of scholarly writing in Computer Science is peer reviewed journals. The peer reviewed journals are the most valued because they have to be checked by other colleagues before they can be published. The hot topics in Computer Science right now are in Big Data and Data Mining. My area of interest is in Big Data and Machine Learning. A few different scholarly journals that represent these topics are ACM Transactions on Computer Systems, Database for Advances in Information Systems, Data Communications Management, and Computational Statistics and Data Analysis. ACM Transactions on Computer Systems is one of the most highly regarded scholarly journals in Big Data. A couple of the most prestigious journals in Computer Science are ACM Transactions on Intelligent Systems and Technology and Foundations and Trends in Machine Learning. The style guide that is preferred for most of these journals is IEEE.

**Section 1: Ethical and Philosophical Issues in Computer Science**

Exploring the ethical and philosophical issues brought about by advances in Computer Science would be a compelling section for this journal. Today, largely due to Computer Science breakthroughs, we humans interact with and depend on technology more than at any other point in our history. This has given us convenience and many, many benefits. But it’s important that we discuss the ethical implications that come from using and developing technology, and also discuss how technology is changing our views on life and our place in the universe. Here are just a few examples of valuable discussion topics:

* How should companies like Google and Facebook ethically handle their users’ data?
* What restrictions, if any, should be placed on Artificial Intelligence (AI) research?
* How does digital communication enhance or degrade interpersonal relationships?
* How much, and by what means, should governments collect data on its citizens to prevent acts of terror and other crimes?
* Should we strive toward singularity and immortality, or remain content with a fleeting and mortal existence? Would the value of life be diminished if we could live forever?

I envision these issues, and many more like them, being debated primarily in the form of opinion articles and comics. I’ve chosen these genres because I believe them to be the most accessible to the layperson. It’s imperative that this journal engages as many people in the Utah community as possible, because these ethical and philosophical issues relate to all of us. As it stands, most people in Utah do not read academic journals. Journals are often esoteric. And they tend to have a style much different from the popular literature that most folks are familiar with. Together, these qualities make journals uninteresting and/or inaccessible to the layperson. By soliciting and featuring mainly opinion pieces and comics (similar to the wildly popular webcomic [xkcd.com](http://xkcd.com/)), the non-technical members of our community are more likely to read the journal, and also to contribute to it.

Topic 2 (Jurisprudence/CS)

**Section 3: Computer Science and its impact on Language/Linguistics**

Back when Computer Science was just starting, computer memory was limited, and language needs were small. Combined, most programs did not support multiple languages. If your company became global, however, you needed to handle some of these challenges. Support for characters from different languages had to be developed. Now, even if you are a small company, you may have to support multiple languages and different types of characters. Our communities have evolved to have people from all over the world from every type of culture and language. Support for these people is a must.

Some examples of how Computer Science has impacted language in our community are how our community has become diverse, and we need to be able to communicate with each other. Computer Science has brought about translation programs that help with the language barrier. Another example is how when a company needs to add support for a new language in their program, they need somebody who can translate the current text into the new language. The person who translates does not need to be a programmer in order to accomplish this. People who are bilingual have been able to contribute in these ways.

An example of an article that could be written for our journal would be a Study of how different companies have integrated support for other languages. How much more successful are those companies compared to others who do not have that support.

Conclusion