Starting in June this summer I had the novel experience of working on computer research. The months I was to work had been set aside to be focused on several projects that would be used in several departments on campus. The bulk of the work would be used to determine appropriate curriculum for the Multimedia Programming course offered by the Computer Science department. The other large project was a project to integrate a microcontroller and a USB controller for use as a sensor platform with onboard storage for the Physics department. Other projects included a series of computer oriented musical composition tools, including some rudimentary of a drum machines and a midi sequencers, another project was a system utilizing three different programming tools to analyze a movie for motion data and convert the motion directly to sound.

My primary duties were to be a programmer, but I began working on the microcontroller project first, considering that it would be the least familiar item on my todo list, and I thought it best to have as much time as possible to finish it. I recommend this when possible, as it makes setbacks much more manageable. The microcontroller itself is an Arduino Duemilanove, which is a great open-source project designed to allow individuals without a great deal of electronics experience to rapidly prototype electrical components. Most of the first week was spent learning how best to take advantage of the Arduino’s capabilities.
One thing to consider about a programming job of any sort is the amount of time you will spend in front of a computer. It’s not unreasonable to say that I spent between 7 and 12 hours a day working with a computer. If you do that you will hurt yourself permanently. The only way to do any job that requires you to spend that much time in front of a computer is to take regular breaks and go outside to stretch. The upside to interning at Sewanee of course is that it is a beautiful campus. So take advantage of at least five minutes an hour and go out side if you must work with computers all day.

This brings me to my first general point of interest for a potential intern. An internship is a learning experience, if you don’t know exactly how to do something, ask for help, read about it, whatever it takes to make you comfortable with the task. It will make your internship a stronger experience, and it will teach you valuable skills to handle other tasks later on. The more you learn the better, right?

After the first week of intense activity, I settled into a fairly regular routine. I would spend my mornings working on the Arduino project, and then use the afternoon to explore ways of creatively integrating sound and graphics using the Processing integrated development environment. This way I managed to get some of the other projects started, and I didn’t just burn myself out. It didn’t always work, but I found myself having some of my best ideas around eight or nine at night, so I ended up keeping a fairly detailed journal of ideas. Just because you aren’t at work doesn’t mean you can’t think about it. The point is you don’t have to think about it and if you’re like me as soon as I don’t have to do something it gets a lot easier to think
about. Professor Carl was very supportive of that sort of creativity, as are most advisors, provided you maintain an open dialogue.

My relationship with my advisor always seemed a little odd to me. At all the other jobs I’ve had, I’ve had a boss. An advisor is a boss, but they are the kind of boss that you should be able to talk too openly. That openness allows you to completely explore the requirements of a project, and it allows you to approach your advisor with project ideas of your own. I feel that some of the best experiences that I took away from this summer where the conversations I had with Professor Carl about the whys of our projects.

Without those conversations I would have quickly floundered on my deadlines. It always seemed that the more I knew about why I was working on task, and the more of the big picture relating to it, the easier it was to see a solution. It was also easier to motivate my self towards a goal when I understood it importance. While that may seem a very obvious thing to say, when you work closely with a project you can easily lose sight of what is important and in doing so you can also find that you aren’t solving the problem very well. As a student interning with one of the professors I take classes from on a regular basis, I can’t stress enough that a good relationship is important. I’m not saying that you need to be the professor’s favorite student of all time or anything like that, but it is important to be able to communicate with the people you are working with. Communication is the start and finish of a good internship.
After several weeks in this pattern, Professor Carl and I changed the focus of our research. The initial projects were to become curriculum for an audio-based multimedia programming course for which we hoped to receive funding. When that funding was not received, we reorganized our approach, so we could still use the curriculum we had already examined for the existing Multimedia Programming course. This required a bit of modification in the existing work, but eventually proved to be more rewarding through the versatility of the Multimedia curriculum.

Based on the experience I had working at Sewanee, I would recommend it to anyone. There is no better opportunity to get involved at a deeper level with the things you are interested in. I can’t imagine many other settings outside of Georgia Tech or the MIT Media Lab where a student would be allowed, let alone encouraged, to use computing as a creative outlet. The highlight of the summer was during the annual Shakerag workshops held at St. Andrew’s-Sewanee School. The Shakerag workshops are series of courses in traditional craft arts, sculpture, and new media. This year Miller Puckette returned to teach a class using his excellent PureData environment, and Marius Watz came to do a talk on utilizing alternative sources of data in art. These experiences were invaluable to my work this summer. Interacting with members of a wider community working on the same sorts of problems you are encountering is a great way to begin discerning your interests for future employment. That combined with the work I did on my own has changed my perspective on many of the potential professions I had considered before this summer. I can’t say where I’ll end up yet, but whatever it is, this summer has helped to prepare me.