

Michael Arnold

Statement of Interest

My research interests are currently quite varied, as I have not yet completely decided which direction I would like to take in my career. I am currently leaning in two broad directions, Computer Graphics and Artificial Intelligence. I am interested in joining this REU site to further my knowledge on how research is done, and which fields of research might interest me the most for future graduate work.

I have already done a substantial amount of work as Dr. Yilmaz's undergraduate research assistant. My most recent work for him involved mining data from SourceForge. I wrote an application to crawl websites, and put relevant information into a database we could query. Working with Dr. Yilmaz on this project has broadened my understanding on not only research, but the field of computer science in general as well.

In addition, I have been taking an independent study in Computer Graphics with Dr. Chang; it is in this course that I have discovered an interest for computer graphics. I used to play computer games when I was younger, and I was always amazed by the images that a computer could render. Furthermore, this leads to very interesting applications in not just computer gaming, but visualization as well. We can leverage some of the techniques used to render 3d computer graphics and create visualizations of structures such as graphs. In future progressions of my research with Dr. Yilmaz, our group plans to use such techniques to create easy to read visualizations of the sociotechnical networks created by some of SourceForge's ontologies.

In the initial phase of the project, while doing some research into techniques to build clustered graphs, I stumbled across a technique that used a rudimentary physics simulation to cluster the nodes in the graph; this sparked an interest in artificial intelligence. The idea of making machines that are intelligent is amazing. I am now curious as to what other innovations could be created by utilizing techniques developed in the field of artificial intelligence.

While I am not sure which direction I would like to take in these fields, I do think that I would ultimately like to work with some combination of the two. Working at this REU site will help me refine my interests into a more precise direction; it will help me decide which direction to take in not only graduate school, but my professional career as well.

My work with Dr. Yilmaz has only served to confirm my desire to pursue graduate school. I know that I must be very comfortable doing research in order to succeed in graduate school. Considering the caliber of the mentors and the prestige of the program, I believe working at REU would be a great opportunity for me to build on my experience as a researcher.