

Thesis Project Portfolio

**COMPARING ETHICS IN COMPUTER SCIENCE WITHIN UNIVERSITY
CURRICULUM AND OTHER INSTITUTIONS IN HOPE OF IMPROVING OUR
CURRENT CURRICULUM**

**UNDERSTANDING THE RESOURCE BARRIER FACED BY UNDOCUMENTED
STUDENTS AT OUR UNIVERSITY AND HOW TO BETTER OUR SYSTEMS**

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

Jerry R. Pinto-Gomez

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Department of Computer Science

Executive Summary

The general issue I have highlighted within my research is that there are ongoing issues within UVA that are not being highlighted, which can be solved by looking at other universities. There are several issues within the university but most of them have a plethora of people at their disposal. The technical portion of my research focuses on the lack of ethics within the computer science curriculum and how there doesn't seem to be any focus or discussion about it. The STS portion of my research focuses on undocumented student resources and how there is not many options for how to succeed after graduation. Both of these issues do not have that many people talking about them, so it was my goal to do enough research to make others aware of these problems.

The reason I chose CS ethics for my technical is that I found that there was little to no ethical discussion in any of my required CS courses. So, I decided to research how other schools approach ethics and how we can implement any of their methods. I then discovered that Harvard and Columbia had implemented an embedded ethics program into their CS program. This allowed for students to have much stronger discussion about ethics and showed that students were more responsive to this form of teaching ethics. I also discovered that the current way we are teaching CS engineering students was not an effective way to get CS students to learn about ethics. The study I found showed that introducing more personal topics resulted in having students understand the ethics discussions better and allowed for reflection of their original outlooks. So, if we could also implement this system, we could introduce essential ethics conversations into our CS classrooms. This would create a student body that can make difficult ethical decisions and help prevent ethical dilemmas.

The reasoning for my STS topic is that when I was searching for resources for undocumented students, I found that there seemed to be nothing for them. Because of this I decided to have conversations with faculty and investigate other schools, hoping that I would find that other schools have done a better job at supporting their undocumented student body. My research consisted of looking at articles and school websites. Once I found schools that had resources for their undocumented students, I further researched the school to learn about how they managed to establish a solid resource center for their students. In doing so I ended up finding out that some schools had it easier due to the number of undocumented students at their school, the laws in their states, or some of them simply have had been working to expand their undocumented resources for a longer time. From these I concluded that the main reasoning for our lack of resources had to do with how short we had allowed undocumented students to attend our institution. I also concluded that we lacked a sense of community with our undocumented body. The proposed solution I had was that we should take inspiration from the work already done by other schools and implement the resources that other schools have. This would not only solve the lack of resources we have but help us build a sense of community among our undocumented student body which, would help them navigate a social technical system that currently seems to not include them.

Looking back at the research I have done this year I believe that I am mostly satisfied. My technical report turned out just like what I wanted. The only thing that I would like to know more about my technical is how to go about actually getting embedded ethics implemented. As for my STS topic I wanted to have more conversations with more faculty and also with faculty at other schools. I think that If I was able to do so I would have an even better understanding as to how we can best solve the problem with lack of resources for out undocumented student body. I

think if someone was to continue this research, they should definitely focus on trying to get the perspective of undocumented students. This would provide the research with insight on how undocumented students are navigating our institutions and would highlight just how difficult some aspects of our resource systems are to navigate. From there I think it would be important to try and research how to get these resources implemented into our UVA networks. Overall, I do think that the work I did this year was very important.

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Technical advisor: Briana Morrison, Department of Computer Science

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STS advisor: Kent Wayland, Department of Engineering and Society

Prospectus

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