Reflections on the Presence of Ethics at Georgia Tech White Paper

Georgia Institute of Technology

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Seven individuals died during the televised launch of the Space Shuttle Challenger. Prior to the launch, ten engineers at NASA and Morton Thiokol, the firm responsible for building the Challenger's solid rocket boosters, recommended that the launch be delayed due to security concerns. After hours of emergency meetings, executive leadership at NASA and Morton Thiokol ignored the warnings of its engineers and moved forward with the launch, giving into financial and political pressure to launch without additional delays. Had the managers listened to the engineers or had the engineers reached out beyond their direct managers, the disaster may have been prevented.

In a few years, we will be those engineers, designers, managers, and leaders who are faced with ethical dilemmas like those surrounding the NASA Challenger launch, the hundreds of deaths surrounding the launch of the Boeing 737 MAX, the racial biases surrounding facial recognition technology, Facebook and Cambridge Analytica's data scandal, and an uncountable number of other decisions whose outcomes led to unnecessary death. As students at one of the top engineering universities in the country, we will have control over the narrative of the future of technology at one of the most pivotal times in the industry. The US is facing the effects of COVID-19, a widening wealth gap, and unpredictably severe climate change; the next two decades are the most critical in shaping the path forward for the country. We can continue feeding into the trend of letting profit motives shape our future, or we can let our vision for the future shape our actions.

For a school like Georgia Tech, understanding and applying ethical principles to the use and development of technology is crucial. There is a lot that Georgia Tech does to incorporate ethics into the community, but we feel that it still lacks a "culture of ethics;" that is, one where all members of the community are actively considering the consequences of their every day

actions. As an institution at the forefront of innovation that prides itself in "Creating the Next", we should also be at the forefront of considering the consequences of our work, which is why we want ethics to be a pillar of Georgia Tech culture.

Before presenting our case for more closely integrating ethics into the culture of Georgia Tech, we acknowledge that the term "ethics" has many different definitions. For the purpose of this paper, we've chosen to use this word to loosely refer to "consideration for consequences" -- in other words, while the vast majority of ethical dilemmas in the technology industry today are riddled with nuance, we consider ethical work to be work that's consistently reviewed with consideration for how it has impacted, currently impacts, and will impact life for those within the ecosystem of the work being done.

Georgia Tech administration has taken actionable steps in creating a more ethical environment on campus. Last fall during ethics week, an annual week of ethics-related activities, talks, discussions, and trainings, a new Ethics Center, ETHIC^x, a collaboration between the Ivan Allen College of Liberal Arts and the College of Computing, was announced. The new design of the College of Computing required ethics class implements a discussion-based format that promotes students to put themselves in situations and think through different consequences of their actions in said situations. Finally, from a student-led perspective , clubs like CS + Social Good, Bits of Good, and MOVE (Mobilizing Opportunities for Volunteer Events) have promoted a culture of ethics and a "consideration of consequences" mindset, while also giving students an opportunity to use and learn technical skills. Despite these numerous steps in the right direction, Georgia Tech is still not where it needs to be.

In early 2020, a registered student organization exposed nearly 3000 records of sensitive student data involving their sexuality and political identities. Our group, a collaboration between

SGA and Bits of Good, formed to investigate the issue and address ways in which Georgia Tech can do better to prevent mistakes like this from happening in the future

The importance of ethics is also a growing concern for graduate and undergraduate students alike.. In fact, in a recent survey, more than 88% of undergraduate students indicated the issue of ethics as being "important" or "especially important". In the graduate community, 93% of students indicated that ethics is important to the workplace, and of that voting pool, 67% of those students had actually been employed. Additionally , around half of all grad students stated that they have directly encountered an ethical dilemma in a professional setting soon after graduating from their undergraduate institutes. This shows that learning and practicing ethical decision making impacts both the present and future conditions of STEM fields

Despite the growing importance of ethics, the Georgia Tech Student body displays an apathetic attitude surrounding the issue. This claim is evidenced by our survey showing that 47% of undergraduates that feel that Georgia Tech is doing neither a good job nor a bad job when it comes to preparing its students for ethical dilemmas that they will face in the workforce. This middle ground that many students have taken indicates that there is a positive side that we are doing decently, but it shines light on the fact that there is so much more that we can be doing to prepare ourselves for ethics in the workforce. We need GT students to take the leap forward and embrace ethics as a cornerstone of how students work.

Students, call upon your professors to have ethics lectures relevant to the topics not just in an ethics class. There are ethics behind nearly every topic. For example, OS design/networking design for people in regions with low funds or bandwidth; the ethics behind the use of AI; dealing with access to new drugs and treatments - these are just 3 examples of how

we can incorporate ethics into our discussion and lectures in classes beyond the ethics requirement.

Student leaders, student organizations across campus like ourselves have the similar capacity to contribute to creating an ethics-first mindset on campus. From sports clubs to CoC organizations, each organization collects student data, and it is important to have some standards in place regarding data security and retention to ensure the safety of data. Over the past semester, we have defined guidelines for how SGA develops products and we believe other student organizations should join us in our initiative to do the same. Our aim is for technical student organizations to take these guidelines and trainings[1] as a robust template that each student organization can adopt and modify as needed. As our next steps, we plan to reach out and continue these conversations with the leaders of student organizations to understand their data collection and aid them in defining their own data guidelines to cater to their own organization.

Faculty, we ask that Georgia Tech leadership make *major-specific* ethics class requirements for all majors. Currently, there are many majors that have a very lax list of classes that will fulfill their ethics requirements, like PSYC 1101, which are not directly related to ethics, let alone our major. Our experiences have led us to believe it's critical to focus ethics-related curriculum around real-world challenges that students could face later as professionals in their industry, and instructors should be held accountable in preparing students for the day in their careers that they may bear the weight of having to make a decision that can severely hurt others or themselves. We also ask for you to listen to students when they ask for ethical implications of what they are learning. Fostering casual conversations and discussions in

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[1] https://tinyurl.com/gtrsotraining

classes outside of the ethics requirement will be one of the greatest factors in creating a shift to an ethics-first culture on campus.

Administration, we ask for transparency. As we have seen from the series of Georgia Tech data leaks from 2018, incidents can happen. We ask that administration be open with students and answer the how, when, and who questions. Not only is it our data, but it will also help us as students learn how to deal with incidents like this.

Over the next semester, we have outlined a few additional goals. We are currently working to create opt-in yearly data usage training programs for organizations that collect a significant amount of data. With feedback from organization leaders, we plan to iterate these modules to make them accessible and as informative as possible. Next is to work on the inclusion of guest speakers that can talk about ethics in academia or in the industry to approach this major cultural issue. Starting conversations about ethics while we're still in college through ethics-focused events will eventually help us become better and more ethical industry professionals.

While we have touched on a few ideas for how to approach the issues we've discussed, we're currently a small team of students. In addition to what we're asking of administration and faculty in the coming years, we're asking students to work alongside us in ideating, appealing to administration to meet the requests above, and calling upon our instructors to incorporate ethics into courses.

As ethics grows ever more important in the tech field, it is imperative that students take the first steps to ensure we learn how to be more ethical as technologists. Recent data leaks and unethical uses of technology have highlighted this issue; we, as a committee and as Georgia Tech students, urge the administration to foster a greater culture of ethical practices. In addition, we

believe students and student organizations should begin to consider the ethics of whatever kind

of technology they develop or utilize and be able to consider the impact that we can have.

Resources

1. [Organization Training Standards](https://tinyurl.com/gtrsotraining) [https://tinyurl.com/gtrsotraining]

2. Join Ethics-related organizations on campus

    a. [SGA IT Ethics Committee](https://sga.gatech.edu/itboard-application) [https://sga.gatech.edu/itboard-application]

    b. Bits of Good

    c. CS + Social Good

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Please feel free to reach out to it@sga.gatech.edu with any questions, feedback, or concerns