

Entering the Techlash: Student Perspectives on Ethics in Tech Job Searches

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ABSTRACT

Public coverage of ethical scandals in tech companies often portrays tech workers as uncaring or short-sighted in their ethical consideration. But how do tech students regard the connection between ethics and their future jobs? To explore ethics in the transition between academia and industry, we interviewed graduating computing students at the University of Colorado Boulder about their perspectives on ethical concerns in tech, decisions during job searches, and their ethics education. These interviews revealed that while students may value and understand ethics in tech, their belief that companies do not value ethics makes ethical consideration in the workplace daunting. In response, we suggest improving support for tech workers through academia-industry collaboration and additions to computing ethics curricula to help students stand up for responsible tech.

CCS CONCEPTS

• **Human-centered computing:** • **Social and professional topics;**

KEYWORDS

ethics, computing education, professional responsibility, job searches

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1 INTRODUCTION

Public animosity towards tech scandals and the companies embroiled in them—a phenomenon termed techlash—is well-documented in research [15], media [1], and pop culture, but appears to have had little material impact on the success of the offending tech companies. However, tech workers are ideally positioned to recognize and prioritize the importance of ethical tech. On multiple occasions, workers have left large tech companies over the mishandling of ethical concerns and socially irresponsible decisions [9, 14], and new generations of computing students are considering the ethical

reputation of employers and refusing job offers over ethical concerns [2, 6]. But if ethically-minded developers refuse to work at companies with systemic ethical issues, fixing these issues becomes even more challenging. Frances Haugen, the Facebook product manager who revealed Facebook’s knowledge of its negative impact on the mental health of users [7] summarized this concern: “Facebook is stuck in a cycle where it struggles to hire. That causes it to understaff projects, which causes scandals, which then makes it harder to hire.” [4].

Understanding the perspectives of tech workers in the context of techlash is an important part of how our field engages with industry and the work we do as part of it [15]. Reports of software developers leaving jobs and students turning down offers indicate that some tech workers value ethical concerns and are willing to sacrifice things like salary and job security to pursue them. However, the motivations behind these decisions and the prevalence of these concerns among students as future tech workers are unclear. Identifying how they develop their sense of ethics and what factors contribute to their decisions about ethical issues may help determine what interventions—ethics courses, workplace incentives, etc.—have the most potential to encourage tech workers to engage in ethical consideration and production.

To investigate these factors, we designed an exploratory interview study centered on computing students close to graduating and entering the tech industry. These students face the unique struggle of applying their recently acquired computing knowledge—including ethical knowledge—as junior developers. In this research we ask what students consider when they search for jobs after obtaining their undergraduate degree, how they define a “good” or “bad” company to work for, and how their education impacts their thoughts on technology ethics.

As individuals who understand the fundamentals of tech work but are not yet fully embroiled in the industry, graduating students provide a unique perspective on ethics in this field. Understanding what factors into these students’ first industry decisions may provide new avenues for supporting tech workers in ethical pursuits.

2 METHODS

We conducted 12 semi-structured interviews with undergraduate students at University of Colorado Boulder who were graduating with a computing-related degree in 2022. Interview participants were recruited through postings to private online forums for computing majors at the university, recruitment slides presented to students by computing professors, and printed posters. Participants were asked to share the recruitment material with other eligible students.

Of the 12 participants, 11 were graduating with a Computer Science degree and 1 with a Computational Mathematics degree.

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We asked participants to self-identify their gender, age, race and international student status. Five participants were women and seven were men. Participants' ages ranged from 21 to 37, with most participants between 21 and 23. Five participants were Asian, five were white, one was Semitic, and one was white Middle Eastern. No participants were international students.

The initial interview questions were based on background literature, media coverage of this topic, and our research questions. Interview questions were iterated on in discussions among the research team and evolved over time based on interview responses. To reduce a predicted response bias towards answering questions with a higher regard for ethics than what participants actually felt, participants were not notified of the study's focus on ethics beforehand. The interviews began with basic questions about the participants' education, their prior work and internship experiences, what things they generally liked and disliked about the computing industry, and what they looked for in a job or company. Then participants were asked whether they considered the ethical reputation of a company, what things influenced whether they thought a company was ethical, what ethical courses they were required to take, and how those courses impacted their perspectives on ethical issues in tech. Participants were compensated with a \$20 gift card to their choice of either Amazon or Barnes and Noble. Interviews lasted 30-60 minutes.

After transcribing the interviews, we performed thematic analysis [3] by conducting open coding on the transcripts and identifying themes. Themes were then discussed and analyzed among the research team and iterated upon. All participants opted to receive and were sent a copy of this publication.

3 FINDINGS

In the interviews participants talked about the impact of ethics on their job search, including their general perception of ethics in technology, ethical issues that concerned them most, pressures that influenced how they act on ethical concerns, and their perceptions of how the tech industry values ethics on the job. Participants were not provided with a definition for the terms "ethics" or "ethical" during the interviews, nor did any students ask for one when we used these terms. Though definitions of "ethics" can vary from context to context, we approached it as a useful shorthand that includes concepts like responsibility, social impact, and justice [5].

3.1 Ethical Concerns and Trade-Offs

Participants' evaluations of the impact of ethics in their work were highly situation dependent. For example, many participants expressed their unwillingness to contribute to something that would endanger the lives of other humans:

"I don't want to directly build something that would cause a human to lose a life... even if it's just code. You're still contributing to that loss of life." (P12)

Participants often used phrases like "directly" and "indirectly" to describe their perceived proximity to an unethical project, implying varying degrees of responsibility for a project or company's work. Only P7 spoke about the possibility of improving the ethical nature of a company's work from inside:

"I'd be willing to give it a shot and see if I can try and make some change in the company to make it slightly less evil." (P7)

The lack of participants speaking about the possibility of making improvements from the inside may point to a feeling of powerlessness over the direction of one's work at a company. This feeling may be especially prevalent among this population, as these students will be entering companies at the lowest levels of seniority. P12 voiced their concern about their ability to make any meaningful change at a company as an intern:

"I interviewed at Tesla and they had a really bad review with how they treat women and minorities. So then I didn't take a job with them because I was like, 'I can't change anything as an intern.'" (P12)

Most participants brought up some scenario in which they would refuse to do work for ethical reasons, but P3 expressed a general lack of concern for issues that did not impact their personal circumstances:

"As long as something doesn't affect me too hard, as bad as that sounds, I don't really care that much." (P3)

P3's comment shows that students' opinions on ethics are far from monolithic. Another common theme was the concept of trade-offs. Though many participants reported valuing ethics highly in their work, almost all indicated they would be willing to overlook most ethical issues for a high salary.

"So I think it depends... on the varying degrees of the moral thing. And... if it's kind of bad... are they compensating [me] enough personally to overlook it?" (P8)

Many referenced what they believed to be hypocrisy in their willingness to do unethical work for a high salary.

"I understand the hypocrisy of accepting a job at Facebook for \$400,000 a year, but I don't have to do it forever. I just do it for a couple years and then I retire." (P5)

Many participants spoke ardently about the value of ethics and of their personal concerns with the tech industry. The realization that they would be willing to do unethical work for a good salary seemed to surprise some participants.

Beyond one participant's mention of student loan debt (P10), participants did not explain why they valued salary above some of their ethical beliefs. However, students close to graduating are likely facing a variety of new pressures that can complicate their decisions during job searches. Many graduating students are entering their first full-time job, becoming financially independent for the first time, or have student loans coming due. Factors that pose a greater threat to students' personal circumstances may frequently outweigh their ethical concerns.

3.2 Ethics Education

When asked why a university might require ethics courses for its computing degrees, participants spoke about the high levels of

influence the tech industry has on the public and the burden of responsibility that power puts on developers.

“I think it’s really important, going into an industry where we’re building a lot of new cutting edge technology and driving innovation, to have a class that really challenges you to ask, ‘Why are we doing these things? What are your views?’ So you’re just not doing a mad scientist sort of, ‘We can, so we should.’” (P12)

Participants’ experiences with ethics education ranged from taking general ethics classes (e.g., in philosophy) to courses devoted to tech ethics, to ethics modules in technical classes—the last of which most described as feeling cursory.

“It feels like my experience with [ethics in] most classes is... the last day of class will be like, oh, and also remember there are ethics.” (P4)

Participants understand the long term impact that their participation in unethical work could have, and many seem to care deeply about the ethical issues they brought up, but most are still willing to contribute to this work for high salaries.

3.3 Does the Tech Industry Value Ethics?

Preparing students to enter industry includes educating them on skills that employers value. But if students believe employers do not value a skill, it’s challenging to convince them to value it either. When asked about the value of ethical knowledge in job applications, no participants believed knowledge of ethical issues would help them secure a job.

“Help me get a job? Absolutely not. I don’t think they care really.” (P8)

P8 felt companies were looking for people who would do their job as ordered without questions, and that ethical thinking would discourage the company from hiring an applicant:

“I think [companies] are more like, ‘Can you just do what you’re told better?’” (P8)

Despite this, most felt that a knowledge of ethics would help them do better work while on the job.

“I think when you have [a] moral background, you’re like, ‘No, a lot of people are gonna suffer if this doesn’t work or if this gets hacked’. So you work a lot harder in your daily life to make things a lot more reliable and safe for people.” (P11)

Whether this perception of disregard for ethics is an intentional effort on the part of companies to recruit employees that act without question, as P8 believes, or is an oversight in companies’ recruitment messaging, the consistency among participants’ responses on this matter indicates that the belief that companies do not value ethics may be pervasive throughout the student population.

4 DISCUSSION

These findings show that even among a sample of students at a single university, there is no single prevailing attitude about how

ethics plays a role in the tech job search. For many, personal ethics come secondary to the opportunity for a high salary. Some recognized that the influence and power in the hands of large tech companies places a responsibility on developers to think ethically about their work. However, no participants believed that ethical knowledge would help them get a job and many thought it would deter a company from hiring them, despite believing that ethical knowledge would help them do their jobs better. Many participants envisioned scenarios in which they felt comfortable working tangentially to unethical work. These hypothetical scenarios are key elements of ethical decision making—weighing responsibility, benefits, and consequences. Students are clearly capable of considering these factors, as no participants were confused when asked about the ethical ramifications of tech work. These students are in the perfect place to improve unethical companies: they are concerned about the impact of their work and are capable of nuanced ethical discussion.

But participants’ willingness to ignore ethical issues for high salaries indicates that it may be a challenging to instigate change once in the workplace. This trade-off may be reflective of a systematic trend in students’ thoughts about their personal impact in the tech industry. It is important to note that this problem of money vs. ethics is likely to be worse for students who are from marginalized groups, including people of color and first generation students. These groups are already underrepresented in computing and face discrimination and mistreatment in these spaces. They also face higher rates of poverty and on average leave college with greater amounts of student debt [8, 10], making them more likely to feel dependent on high salary jobs.

Public techlash negatively impacts tech workers and frequently implies an authority over company decisions that developers typically do not have [15], which might prompt feelings of helplessness. Shklovski et al. describe learned helplessness as occurring “when people come to believe that a situation is unchangeable or inescapable and will often construct reasons for why this is so even if solutions become available later on” [13]. If developers feel demotivated for their attempts to support themselves in high-salaried positions, they may focus on their own well-being and de-emphasize ethics in their decision-making. Vilaza et al. highlight how tech workers interested in ethical work must not only complete this ethical work, but also create and implement structures within their organizations to accommodate ethical considerations and convince management to adopt these practices [11]. Both public and industry support may be key factors in encouraging tech workers to work for the inclusion of ethics in their jobs.

Increased academia-industry collaboration may also help strengthen general tech worker support and provide a grounded understanding of the challenges facing progressive tech futures [12]. We might also consider providing training on how to raise ethical concerns in workplaces that are hostile to ethical discussions, including content like role-playing ethics conversations with coworkers or lectures on protections and consequences for whistleblowers. Teaching methods in which developers might covertly make an impact on the ethical nature of their code would be especially valuable to students entering the industry in low positions of power [16].

Given that our sample came from a predominantly white, well-resourced institution, student trade-offs between money and ethics

are likely more prevalent among marginalized groups that face greater financial and hiring challenges in tech. We plan to use our results to design a survey with for a larger participant pool that represents a greater diversity of student experiences to isolate the relative importance of factors like salary and ethics that students consider during applications.

5 CONCLUSION

In this work, we interviewed students graduating from the University of Colorado Boulder with a computing-related major in 2022 about the role of ethics in their job searches. We found that while students understand the value of ethical knowledge in tech and care about a variety of ethical issues, most felt that tech companies do not care about their employees' ethical evaluation skills and they are willing to work on code they deem unethical for large salaries. The perceived lack of concern from companies, combined with public animosity towards tech workers through techlash, may contribute to a feeling of learned helplessness, convincing students that ethics issues are too intractable to warrant their effort. Increased support from the public and collaboration between academia and industry may help empower students to pursue ethics in these hostile environments.

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