Opportunities and Obligations for Computer Scientists*

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Thank you. As some of you may know, my name is Andy Sayler, or "that guy who did all the operating systems YouTube videos and who fixes the broken virtual machines". In any case, today I stand before you as a fellow graduate of the Department of Computer Science. Now, I must warn you, I wasn't given very much guidance regarding what to speak about today. Which, I guess when you think about it, makes this a pretty good analogy for post-graduate life: Allow me to be one of the first to welcome you to the "real world" – where we can no longer rely on others to spell out, in detail, what they'd like for us to do. Good luck!

I would also like to note that I am a bit of strange choice for graduation speaker. After all, I'm like the Puxatony Phil of higher education – I came out of undergrad, saw my first monthly bills, and, well, five more years of grad school. That makes this kind of like asking Mick Jagger to give a speech about how to retire from Rock and Roll... (Don't worry if you didn't get that one; it was for your parents.)

But since I've been afforded the privilege of speaking to you today, I'd like to commend everyone on their accomplishments over the last

four, five, or in the case of some of my fellow grad students, fifteen years pursuing Computer Science degrees here at CU. Congratulations to everyone gathered here today. The degrees you are being awarded are certainly well earned, and will surely serve you well in the future. You have joined the department during a time of unprecedented growth and have excelled to yield the largest graduating class this department has ever produced.

This is especially impressive given the youthfulness of Computer Science as a field. We are likely unique across all of the graduation ceremonies taking place today in that we have individuals in this room who are older than our entire discipline. (And I note that not to imply that anyone here is "old", but merely to point out that our discipline is really very young.) Computer Science, as a field of study, has only been around for the last sixty years or so; and our own department hasn't even turned fifty. This fact presents numerous opportunities that our peers in other fields will not be afforded. Chief amongst those is the opportunity to interact with the founders of our discipline. We are fortunate to have many such individuals still alive, and in some cases, still active in our field. If I am to impart a single suggestion to you today, it would be to strive to exploit this fact. We are as physicists in the age of Newton, or

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astronomers in the age of Galileo. Take the full advantage of this, and endeavor to meet, work with, and learn from those that have paved the road we now walk. It is a rare opportunity we have, and we will be some of the last computer scientists ever afforded it.

So that's the first bit of potential wisdom I have for you. But here is the second – if ever presented with an opportunity to speak, at length, to a captive audience, seize it. Doing so affords you one of those rare forums where your audience is more or less compelled by common politeness to listen to what you have to say. (I'll also point out that the challenge of accessing your smartphones inside these robes only increases the novelty of this opportunity.) And since I have followed my own advice and accepted this invitation to speak, permit me a moment of moralizing.

We are fortunate to work in a field that society, for better or worse, values quite highly. And indeed, I sincerely hope that this valuation brings you and your loved ones prosperous lives. But we must not take such an investment for granted. The value society has placed on our skills requires that we too seek to return value to society. Through Computer Science we have the potential to provide great benefits to the world. But we also run the risk of doing great harm.

It is not inconceivable that the work we do to increase efficiency through the automation of day-to-day tasks will have a hand in the elimination of large numbers of existing jobs, likely exacerbating the growing issues of economic inequality our society already faces. The work we do connecting the world via the Internet has facilitated unprecedented levels of human communication, but it also raises numerous privacy challenges as governments and corporations alike seek to leverage these technologies to surveil the ways in which we speak. Self-driving vehicles have promising environmental and safety benefits, but these systems will also be required to make life and death decisions dictated by the code we craft.

These are not challenges to be taken lightly, nor are they ones we can afford to kick down the road for others to solve. These challenges will not be solved by the talking heads on the evening news nor in the comment threads of Internet. It is our duty as Computer Scientists, and as humans, to ensure that we work to minimize and offset any harms that may come from the goods we seek to provide.

We have all been afforded a great privilege to have been able to obtain the degrees we now hold. We must apply that privilege in the highest manner that we can. Having had the opportunity to know many of you during our time here, I have no doubt that each and every one of you can rise to meet these challenges head on and will work to resolve them in a manner befitting of the degrees you now hold.

If you are able, volunteer some of your time to support the work of worthy organizations who otherwise might not be able to afford your talent. Endeavor to ensure others are afforded the same privileges we have had, perhaps by teaching or mentoring those interested in our work, or by donating to educational institutions such ours. And in everything you do, be conscious of the ethical ramifications of our work, and have the courage to speak up when you feel errors of judgment are being made. Society values us and our skills very highly, and we must endeavor to return the favor.

So with that parting thought, congratulations on your accomplishments, best of luck in your future endeavors, and thank you for your time.