Notes on “Why to apply to grad school or not”

for prospective grad school applicants

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I’d only like to cover three major subjects in this document, because frequently these kinds of discussions lose focus. More in-depth analyses can always be obtained through personal meets, attainable if you e-mail me. Stuff like “what the application process looks like” can be obtained online, so I’m not really gonna focus on these.

#1 Decouple the decision between an MSc and a PhD

The educational system in the States allows for people to apply for a PhD straight from an undergraduate program, and get a “Master’s along the way” basically for free, whereas applying for a MSc usually implies a huge amount of tuition fees, accompanied by living costs and the occasional textbook. Therefore, more and more people are applying for PhDs just to get the MSc and then drop out. I completely understand the motivation behind this. I myself am only a holder of a BSc at the moment and there’s no way I could pay for a typical US-based MSc (note that UMD is one of the few institutions that actually provide financial aid for MSc students). However, it is important, inside one’s brain, to decouple the decision of what one wants to do. Are you that excited about research that you know that you want to get into academia, so you actually know that you do need a PhD? Have you been involved with undergraduate research? Have you tried working in industry, have had a taste of “the other side”, perhaps having gotten fed up by moody bosses and want to do your own thing? Those are all questions that one needs to pose to oneself, and this is the time! People that are applying for PhDs after having gotten their MSc are, in my opinion, better prepared, because they know they want that extra step. For people like myself, who applied straight from a Bachelor’s, the situation is really hazy. These people tend to have second thoughts all the time! “Is this what I want? Why don’t I just get my Master’s and go make those six figures? How do I tell my advisor?”

These are all questions that, in my opinion, one needs to answer for oneself and let the answers grow inside them. This is the time for you to start asking what you want from your business life! In a perfect world, the average student would be able to apply straight for an MSc, complete it and *then* decide whether they want to move forward, but over the last few years this murky

situation of “straight to a PhD” has been causing a lot of organizational problems for universities (grads drop out, which is a loss on investment) as well as psychological problems for the actual grad students. If you’re pretty sure that you just want to work as a programmer for any one of the thousands of companies out there hiring programmers, even a Master’s might be overkill!

#2 There are less-than-noble reasons to go to grad school, and it’s ok.

Lots of people talk about the “noble” reasons to go to grad school. Working in research is actually one of the few things that you can do in this life where your personal improvement to some degree implies the community’s improvement. Contrast this to working on a company’s software product, which is known to be inferior to a competitor’s, but the company pays you to increase its market share. Furthermore, one of the other things that I’ve heard being mentioned a lot is how awesome it is to be to be working with people who are, well, ridiculously smart and pioneers in their fields (and I’m not arguing with that, you learn something new every day). However, what is to be said about other reasons, that people might consider not noble, or even “immoral”?

I’m Greek-Canadian, but I’ve lived my entire life in various districts of Athens, Greece. Things in Greece are very bad. PhD holders can’t get a job as cashiers, and even if they do get a job, they don’t make enough money to pay rent and bills, let alone make a decent living. If you’re a good undergraduate student looking towards graduation, there’s only one path, and it’s the get the hell outta here path. This is not an isolated event; the world is going downhill, and people need to make a living. What a convenient path to actually continue your studies abroad, for a rather long period of time (5-6 years for a PhD), while actually being paid for it! This is something that faculty acknowledge when making their decision to accept people. Lise Getoor’s webpage links to a document of a girl who mentions it as a valid reason to do a PhD, so at least I know that it’s *been* acknowledged before... My reasons for doing a PhD were mixed: 50% I’d done research and I liked it and 50% I needed to leave Greece. Should you be killing yourself if you were good enough to be accepted into grad school, even if the main reason you did it was because you needed to move? Trust me when I say that, when reviewing your application, the faculty that accepted you *loved* what they saw, and it didn’t matter where you came from.

What about the money? While it is true that if you do a Master’s / PhD you will turn your back to whatever kind of money that you would be making if you landed an IT job for these years, I believe everybody knows that with an MSc and a PhD from a top university like UMD, six figures are pretty much guaranteed. Should we really consider a person motivated by a fat paycheck to be an immoral person? After all, he’s putting in the extra work to get the degree, and for an institution like Maryland, this is *really* a lot of work! He’s not exactly stealing the position from somebody else…

Some people are also interested in the prestige that comes with a grad school degree. Maybe half their family were PhD holders and they themselves would like to be referred to as “Doctors”. Maybe it is somewhat ***expected*** of them to follow on the family tradition. What about those people?

If you find yourself to be “mirrored” by one of these “less than noble” reasons, the instinctive reaction is remorse, self-pity. “Oh God, am I going there just for the money?”, or “Whether I like it or not, I’d better gun through, because things back home are bad.” However, this approach is wrong! Wrong, because it’s not logically sound. You were good enough to be considered for or even accepted in grad school, so whatever your reasons might’ve been, you *are* good enough. Also, because it doesn’t attain anything. Those dark thoughts only serve to slow you down and make you unhappy, and I’m mentioning this as a reminder for both the reader and, unfortunately, the writer.

#3 Things I wished I had done in my undergrad

This is probably the easiest section of this text. I wish I had worked more on my mathematical background. In Greece, there does not really exist the notion of a midterm. Furthermore, many (if not most!) undergraduate courses have no in-semester work: 100% of your grade is determined by the final exam. So what people are basically doing is not attend lectures, and then cram one week before the final exam to solve past subjects together and thus be up for a good grade at exam time. This situation is particularly ubiquitous in math courses offered typically in freshman and sophomore year, providing the backbone for the rest of what we call Computer Science. And this backbone is lost to most of them. In order to avoid being bitten in the back by this approach later on, your average Greek undergraduate student will have to exhibit a remarkable degree of self-motivation and organization, because their professors do not care at all about enhancing the courses and no amount of negative evaluations is going to make them care.

Whatever the situation might be with you (poor professor / TA support, a personal disgust for abstract or applied mathematics, illness that kept you away from school for a semester or two), ***do not let your mathematical background vanish***. I was recently in the TA room waiting for my students to come by and one senior undergraduate student was suggesting to other undergraduate students that it is a good idea to apply for a Master’s in Computer Science because math is not that important in CS (presumably compared to a Master’s in Mathematics). That is just preposterous. I went through the grad-level Machine Learning course without ever having seen the gradient sign (∇) before in my life (and if you don’t know what the gradient of a function is, this is the time for a Calculus review). Not a fun experience.

This concludes the matters that I wanted to cover.