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Do I Need to Go to University?

28-36 minutes

Instead of asking “Is university good?”, ask “Do I have something more compelling to do?”

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This essay collects thoughts I've had over several years, and doesn't attempt to address present changes in whether it makes sense to attend university due to COVID.

I’ve been somewhat successful as a researcher without an undergraduate degree or PhD. As a result, I often have people ask me about whether it’s possible to be successful without going to university, whether they personally should, or whether I can help them persuade their parents. At this point, I've probably received around a hundred emails on this topic. It's still hard to know how to respond.

I’m reluctant to encourage people I don’t know well to take non-traditional paths, because I think they’re riskier and depend a lot on the person. In fact, I suspect that many of the people who write to me would be well served by going to university. At the same time, I think alternative paths can be a great choice for some people -- in some cases, significantly better than going to university.

Unfortunately, society isn’t very well set up to support and validate young people for whom this is the better choice. So, if you’re considering doing such a thing, you not only need to reason about whether it’s a good decision, but may also need to navigate tricky emotional and social challenges.

I suspect that some people who write to me are really looking for validation and support of their preference to not go to university. Unfortunately, I’m not well positioned to give that support, because I don’t know them well.

What I can give, and what this essay aims to do, is to share thoughts on ways to think about the decision, navigating the social and emotional challenges, and resources you may find helpful.

Ways of Thinking about the Decision

My first suggestion is to compare university to concrete alternatives. Instead of asking “Is university good?”, ask “Do I have something more compelling to do?”. Instead of “Should I do a PhD?”, ask “Where can I find the best environment to grow as a researcher?”. And so forth.

Spending a year doing something else is almost always reversible: if you end up wanting to go back to university, it was just a gap year. As a result, the most important question is whether it will be time well spent and that requires you to think about what specifically you’ll be doing.

If your plan is to learn or work on projects independently, it’s worth thinking especially carefully. This can be great -- I did it for three years and grew a lot as a result -- but it can also very easily fail. Some important questions to ask yourself are:

- Do I have things I deeply want to spend a year of my life exploring or working on?
- Do I have a way to support myself that leaves me time and energy to grow?
- Can I really work self-directed for months at a time? Do I have examples of me working hard on a personal project or learning without external structure?
- Do I have or can I learn the skills I need to work on this project independently?
- Do I have sources of community, peer support or mentorship for what I want to do?

Some of these questions are tempting to just say yes to without engaging: “*Of course* I can work self-directed without structure.” But these are actually difficult things, and switching to having no structure is jumping into the deep end. Many of the people I’ve seen successfully work independently in their late teens / early twenties had a history of independent study or projects before doing so. For example, many Thiel Fellows had either self studied to the point where they were they largely knew the undergraduate curriculum in some topic, or had significant applied expertise in programming.

Doing an internship, residency, or startup can be easier -- at least in some regards -- than working independently. There's more structure (especially in the first two) and a clearer path to supporting yourself. For these, I would mostly focus on how valuable you think the experience will be. Do you feel like you'll learn? Does it feel like a good community? Does it feel important? If it feels urgent, is the urgency for good reasons?

Not Having a Degree

It's important to be aware that not having a degree can have several negative long-term consequences.

University degrees have a lot of signaling and credentialing value. They cheaply communicate to other individuals and organizations that you have some baseline skills, at least in theory. In some fields, you can succeed without a degree by demonstrating skill in other ways (publications, open source projects, portfolios, talks, awards, work history, referrals, etc). Other fields are less accepting. How can you tell which type of field you're in? One useful test can be to look for examples of people who are successful without degrees in your field. Even if your field is very good about this, you may wish to move into another field at some later point and run into challenges where your previous successes aren't legible to the new field, or the new field is more credential focused.

Unfortunately, traditional credentials may be more important for demographics than others. As a white male, I suspect that it's easier for me to be taken seriously without a degree that it would be for others. If you are part of a group that society is less likely to perceive as skilled by default, it may be harder to do without the validation of a degree. This is obviously really unfair, but I don't feel qualified to give advice on it or comment on how big an issue it is.

There's also a weird flip side to all these downsides. Once you establish yourself as competent there is this kind of threshold effect where not having a university degree can suddenly start causing people to actually take you more seriously. This kind of countersignalling effect seems to be common when you do non-traditional things.

In addition to the direct career consequences, not having a degree can be a source of major immigration challenges. The version of this I've seen most often is people wanting to move to the US (usually the Bay Area) but being ineligible for most visas due to the lack of a degree. If you think you may have this problem, try to do a short consultation with an immigration lawyer early: there may be things you can do to start building a case. (For those immigrating to the US, the solution to this is usually to get an "alien of extraordinary ability" O-1 visa, which doesn't require a degree but does require a lot of evidence of your accomplishments.)

Family Challenges

Unfortunately, even if you feel confident that you would be best served by taking a non-traditional path, many young people face significant social and emotional barriers to doing so, particularly from adults. While some people are lucky enough to have a family that will support them doing something unusual, many are not. This can manifest in ways ranging from gentle skepticism, to lack of support, all the way up to coercive measures. It can also involve hurtful accusations or gossiping (eg. someone isn't going to university because they're lazy or failed).

Skepticism or lack of support from family often comes from a good place. People around you are, naturally, worried about what will happen to you if you do something unusual. They may also face other pressures. For example, they may worry that their peers will think they are being irresponsible by "allowing" their child to do this. They may even worry how it will influence legal proceedings like a divorce, if such a thing is relevant. It can feel especially hurtful when these other pressures are clearly major factors. It's a difficult and emotionally stressful situation on both sides.

The situation is often complicated by deeply asymmetric power dynamics. Depending on the situation, your parents may have direct legal power, you may depend on them for financial support, you may depend on them for housing, and even if you are self-sufficient they may have legal control of your assets. They also have, independent of their hard power, a great deal of emotional power from the role and authority they've exercised throughout your life. This can make the situation scary, volatile, and in some cases potentially dangerous for you.

The most common resolution I've seen or heard of is external validation: someone gets a Thiel Fellowship, or their startup gets funded, etc, and people around them become much more supportive. This can be a somewhat disappointing resolution for the "validated" party ("why couldn't they believe in

me before I was endorsed?"). It may help to try and picture things from the perspective of someone who is scared for you and doesn't understand the situation very well.

In many cases, communicating with your family may be helpful. There's a lot of general advice on how to have difficult conversations (non-violent communication, difficult conversations, etc.) that might be useful in having an effective conversation. There's also more specific advice on how to have particular kinds of difficult conversations with your parents (eg. telling them that you're gay, or an atheist, or other things they may not respond to well) that may have some transferable advice. Unfortunately, there are also cases where communicating might make things worse, because of the asymmetric power adults may have over you.

While it won't solve the fundamental issues, it can be extremely emotionally helpful to have an aligned support network. Having people who were proud of me for good reasons and could recognize my successes and failures was deeply affirming and motivating for me. This is something you can deliberately build by seeking out people who share your interests and values.

(In truly extreme cases, such as abusive families, there may be ways to get support from a family court, get yourself emancipated or have your custody transferred. There may be softer courses of action, like living with family or friends for a bit without legal action. These are extreme courses of action that may sometimes be the best of many terrible options in rare cases. I've also heard stories where they made things worse. I don't feel qualified to give advice on this; if you are considering it, please seek specialized advice and be careful. You may be able to go to a legal clinic or get a pro-bono consultation with a family lawyer. You may wish to confirm confidentiality rules before speaking, in case they are different for someone underage. There may be specialized non-profits in your area that can give you advice, hotlines, or useful resources online. I am not the right person to ask for advice on this.)

Social Challenges

For many people, university is a period of social development. They learn social skills, make long-term friends, and form romantic relationships. For some people, especially readers of this essay, it seems possible this is the biggest benefit of university.

It seems like many precocious young adults who leave university have less friends their own age. Does that mean that not going to university stunts social development? It seems hard to tell to what extent going to university actually causally effects social outcomes rather than just being correlated with them. After all, it seems like many of us also didn't connect that much with our peers in grade school. For example, I was intensely bullied in elementary school, and while I had friends in high school, I wasn't that close to anyone. In fact, until recently, the vast majority of my friends have been 5-10 years older than me. Conversely, I have friends I'd put in the "precocious teenager" category who went to university but didn't seem to really make friends their own age, especially during their freshman year.

My guess is that correlated issues -- like not fitting in with one's age group and maybe being a bit shy -- are the bigger effect, but that there's also a direct causal effect from not going to university. Either way, I suspect some readers may find it hard to make friends among peers, regardless of their decision on university. So it seems good to talk about a little bit.

Firstly, I think it's okay to have your friends be older than you. Teenage-Chris had lots of deeply meaningful connections with older friends and I think that was fine. They were often more emotionally mature, thoughtful, and principled than my teenage peers, and sometimes felt like older siblings. Over time, the age gap became less significant and by my mid 20s it was gone.

I do think there's a lot to be said for investing in being social if it doesn't come naturally for you. University might make this a being social easier, but I think committing yourself to investing it it is much more important. For me, I've always disliked bars and parties, but I deeply cherish having close friends, which requires me to meet people. What should I do? Partly I've found it important to push to go to parties even if I find them stressful. But I've found it more helpful to just really deliberately seek out social contexts that I do like, and to create new ones if I can't find them. For example, last year I held lots of small tea parties, and it was lovely!

Another concern is the effect of not going to university on romantic relationships. Many people have their first serious relationship in university, and I've seen friends, both male and female, worry about having missed this. For me, there was a point when it seemed like most of my peers had found a partner in undergrad, and younger-Chris was dramatically worried that he'd lost his chance and would be alone forever. In retrospect, I was more worried than I needed to be. Most of those relationships didn't last and, at least in my social circles, most people find their long-term partner outside university. I'm now

inclined towards a middle view: going to university is helpful for finding your life partner, and missing out on that is perhaps the biggest cost of not going, but it's also only one factor. It's cliche, but the thing that really does matter is putting yourself out there, meeting people you might connect with, and waiting for the micromarriages to add up.

There's one final subtle issue I want to mention, which intersects with all of the above: not going to university can create a professional gap between you and your age group. I became a full time researcher at Google Brain when I was 23. In that role, I started teaching, mentoring, and even managing residents and PhD interns who were often quite a bit older than me. And sometimes when I spent time with people in my age group outside of work -- often, junior PhD students at that point -- people would not infrequently ask me about opportunities to do an internship with me. But the thing I wanted was to find friends and peers, not find an intern! Even when people didn't do this, I worried a lot about the possibility that I was in a position of power relative to people I was interacting with. Meanwhile, a lot of my professional colleagues were older than me and, having known me since I was a teenager, still treated me that way. This dynamic of mismatched professional achievement faded for a variety of reasons as I moved into my mid and late 20s, but was still a strange aspect of that period of my life.

Resources

Community / Learning:

- SPARC Camp (14-19?) - Camp for talented high school students. Everything I've heard suggests it's an incredible program, and can help you consider a diversity of paths moving forward.
- The Recurse Center - Writers retreat for programmers. Everyone I know who's gone speaks extremely highly of it. The program is free and offers needs-based grants to cover living expenses for people from under-represented groups in CS.
- **Hackerspaces** - Hackerspaces are community technology spaces, and can be a great way to meet people who are really excited about technology. They are quite common in large cities.
- **Auditing Courses** - Professors will often be fine with someone politely sitting in the class and auditing the course. Try to be considerate of the professor's time and the needs of the students around you; prioritize them.
- **Conferences** - Conferences can be a great opportunity to gain exposure to a research community and meet researchers. Academic conferences are almost always open to everyone, both to attend and submit papers. There's usually a fee to attend, which you may be able to get a student discount on, or volunteer to avoid. It's often the case that, while getting a paper in the main conference is quite competitive, getting a paper into one of the workshops isn't.
- **Online Communities** - There are often great public or semi-public online communities around different technical and research topics, if you look hard enough. These may be subreddits, facebook groups, StackExchanges, slack communities, mailing lists, IRC channels, Twitter, et cetera. One heuristic is to go to events (conferences, meetups, etc) with the community you want to be involved in, and then find out where those people hang out. This is especially useful because sometimes the best communities require an invitation.
    - Twitter can be surprisingly great if you carefully curate the people you follow. A few of my favorite ML-focused accounts include David Ha, Miles Brundage, Janelle Shane, Alex Mordvintsev, Maithra Raghu, Jeff Dean, Catherine Olsson, and Tim Hwang. Some other accounts I find delightful are Devon Zuegel, Alexander Berger, Emma Pierson, Michael Nielsen, and Julia Galef. This is only a small slice optimized partly for variety -- there's lots of people I think are fantastic. You can also follow me, but obviously I'm biased on that.

Funding

- Thiel Fellowship (16-22?) - Financial support to work on whatever you want for two years (50K/year), with the condition that you don't go to university or take a normal job during that time. Extremely flexible and self-directed. Fellows mostly do startups, but open to research or non-profits.
    - Peter Thiel is controversial -- I disagree with him on many things -- but I think this is often the best program for young people who want to take a non-traditional path, and that politics shouldn't effect this.
- 1517 - Mentorship, grants ($1K), and VC funding ($50K - $250K) for young people taking a non-traditional path. Founded by Danielle Strachman and Mike Gibson, both of whom I trust significantly. They were both on the founding team of the Thiel Fellowship and have worked with younger makers for almost a decade.
- EA Grants - Funding (10-100K) for people who want to make the world a better place. Includes the possibility of grants for people to learn skills, study, do unpaid internships, or write blogs. (You

should expect these to be competitive and be aligned with Effective Altruism before considering applying.)
- **Startup Incubators** - Do you want to start a company? There's a lot of organizations that exist to help people in the early stages of doing so, including funding and mentorship. The best known one is YCombinator but there are many others.

Internships, Residencies, etc.

- **Visiting Academic Labs** - Academic research groups are sometimes open to people visiting them. This could range from you dropping by for lunch to hanging around the lab for several weeks -- obviously, longer visits are a bigger ask.
    - See advice on cold emails below.
- **Academic Internships** - Interning at an academic lab can be a great way to grow your skills in a discipline and become more connected to an academic community. Academic internships tend to be less competitive than an analogous industry internship (the typical academic intern is an undergrad student, while the typical intern in a good industry research group is a PhD student). Some are unpaid, but most are paid -- just, a lot less than industy ones. It's often possible to apply without being a student. There may not be a formal application process.
    - See advice on cold emails below.
- **Industry Internships** - Interning at a company can also be a great way to learn and grow. It's typically better paid than an academic internship, often has a path to a full-time job, and good ones may give you access to more 1:1 mentorship or better resources to do your work. It's often possible to apply without being a student.
    - If you apply to a large company, there can be a lot of variability in what an internship is like. Often, the way to get an interesting internship is networking, so that a team you want to work with will request you. In research, this is often done by going to conferences in your topic and meeting industry researchers who share your interests.
    - Internships at non-prestegious companies, or on less glamorous teams within a company, are also much less competitive. They can be a good stepping stones towards a research career. (Also consider an academic internship.)
- **AI Residencies** - If you're interested specifically in AI, several leading research groups now offer residencies where you can spend an extended period of time learning how to do research, with dedicated mentorship. These often pay quite well (about 80-100K/year), and can be quite competitive. The main ones as of writing are the Google AI Residency, the Facebook AI Research Residency, the Uber AI Residency, the Microsoft AI Residency, and the OpenAI Fellows program. There is also the OpenAI Scholars program, specifically for under-represented groups in AI research.
    - **Apply for more than one!** I've spoken to many people who applied for the Google AI Residency, didn't get accepted, and decided they weren't good enough. I strongly suspect that many of these people would have a good chance of getting into others if they kept applying. The Google residency is likely the most competitive -- I expect it's significantly harder to get into than most grad programs, although more flexible -- and any application process is stochastic.
- **Grad School** - Doing a Master's or PhD can also be a great way to grow your skills, get mentorship, and engage with an academic community. PhDs in technical subjects like CS are typically paid, covering the cost of the program and giving you a stipend to live on. In some cases, it may not be that different from doing a long internship.
    - While challenging, it is often possible to get admitted to grad school without an undergrad degree if you have other accomplishments. This usually involves a professor really wanting to have someone as a student and advocating for them.

Cold Emailing Researchers

Many of these opportunities don't have a formal application process. You need to reach out to people. This is a skill, but the basic recipe is to invest in figuring out who it makes sense to reach out to, understanding them, and writing a thoughtful email.

- **Be polite.** In general, when reaching out to people, things will work better if you are thoughtful, courteous, and polite.
- **Be mindful that people are busy.** The people you are considering reaching out to are busy and probably have lots of people asking them for things. They're probably struggling to balance between far more demands on their time than they can fulfill. (I've had periods where I literally received 5-10 emails from strangers every single day for advice or help: I can't give substantive

responses to all of those, on top of my other responsibilities, in a way that would be healthy for me.) Treat their time like an important shared community resource.
    - Have you looked for answers to this question online? For example, one of the most common questions cold emails ask me is how to get started in machine learning, but people have written dozens of essays on this which are much more thoughtful answers than I can practically give in an email.
    - Is this the right person to ask? For example, if you are asking for an internship, have you made sure the person you're approaching works on the topics you're interested in?
    - Could a less busy person help you equally? For example, if you want to ask someone questions, could you ask a grad student instead of a famous professor?
    - Please don't act like you have an automatic right or are entitled to someone's time.
- **Don't spam.** Don't be the person who spams dozens of researchers with long lists of questions. Don't write to authors of papers demanding they debug your code or help you with homework. (Often, better venues for these questions are StackOverflow or online learning communities.)
- **Understand the researcher or group.** At least skim through their recent papers and ideally read a few that align with your interests more carefully. Showing that you've invested energy in undestanding the person you're reaching out to is one of the most positive signals you can give. If you're looking to visit or intern with a group, think about how your interests connect to theirs.
- **Adjust for Impostor Syndrome?** My personal experience is that I both get lots of blatant spam emails (eg. "do my homework for me") *and* find out that many people who I'd really want to email me (eg. seriously thought about one of my papers and want to talk) are hesitant to do so. I've particularly noticed that the average quality of emails from junior women is much higher than the average, and suspect that they are typically applying a much higher threshold for reaching out. I don't know how to help you adjust for this, but if you're worrying about reaching out you should probably update positively that it's more likely you should.
- **Example:** One of the most important emails I've written was a cold email to Yoshua Bengio in 2013. I spent more than a week writing it. This included reading many of his recent papers and thinking a lot about where our interests overlapped. The final email was only a few paragraphs.

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5 Comments