

PhD: What Matters. And What Doesn't.



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Unofficial, personal opinions of Radu ☺

For PhD students

- What is the most important thing?
- 5% inspiration, **95% perspiration**
- Work 6-8hrs/day, no more
- Do something quantifiable every day
 - Write 2 pages on a paper OR
 - 500-1000 lines of code OR
 - Read and understand 2 papers, ...
- Student-advisor relationship is **not unlike marriage** 😊
 - Finding right advisor is most important
 - More **important than area** you work in
- Read, read, read (1-2 papers/day)

For SBU PhD students

- if you can, start some research immediately
- quals are important but advisor/research is even more important
- spread out quals over 3+ semesters, don't cram everything in first semester unless you have a certified ninja warrior diploma

Top 10

1. Do not submit to crappy conferences (only top 4)
2. Do get ready for rejection (5-6 times before paper gets in)
3. Do something quantifiable every day (read paper, write 1-2 pg, think)
4. Do take finding an advisor seriously, and leave your advisor early
5. Do go to all top conferences (to network mainly!)
6. Do make friends you respect
7. Do go to internships (even in large soul-crushing cubicle companies)
8. Do not get involved in organizing non-academic committees/BBQs/...
9. Do get involved in research service/program committees/reviews/...
10. Do save cash (so you don't have to make cash-driven decisions later)

For MS students

- Take difficult courses
- Work on important projects!
- Don't do what everybody is doing just because it is popular
- Definitely take:
 - OS, networking, algorithms, data structures, basic ML
 - Languages: C, Python, Go, Java
- Go work for startups
- Don't try to impress parents/family with positions at big companies where souls are going to die
- Work on interesting things, startups etc.

For everyone: Money Mgmt

- Maximize 401k and other pre-tax retirement options available
- Additionally: invest 15-20% of after-tax income every month
 - Don't think about it, invest automatically
 - Even as a student (!)
 - \$250/month x 5 years @ 7% return = **\$18,000**
 - \$3000/month x 15 years @ 7.5% return = **\$1million**
- Don't live beyond means
 - ensure 75% after tax income > expenses
- Beyond the above don't worry about cash too much until after 35+
- Agree to 20-25% pay cut to work on important things
 - Looking back: it is much more important than cash

Career Plans

- Academia
- Research Lab
- Larger company
- Startup
- Small company

- Why
 - Freedom
 - Time
 - Topics
 - People
 - Work with smart people
 - Have some choice of who you work with
- Why Not
 - Lower Pay (25-50% lower !)
 - May not be able to keep up

- Why: Cannot get academic job but want more freedom than typical company job
- Why Not: main company treats you as a second-class citizen, usually very little impact

Larger Company

- Better Pay
- If you
 - Can handle cubicle boredom
 - Can handle (sometimes very) incompetent bosses
 - Can follow instructions
 - Don't need too much independence
- Environment in larger companies is often biasing towards mediocrity

Startup

Startup = small company that has
the potential to grow exponentially

Startup: why work for one?

- exciting
- lots of impact (individually)
- learn allot
- can become millionaire (low probability)
- you learn what you are made of
- stay 3 years and move on (unless wildly successful)

Startup: why not work for one?

- too much work
- lower pay (15-30% lower!)
- you actually have to do something 😊
- in big companies
 - you may end up doing NOTHING for a very long time
 - free food
 - stability
 - almost no impact (individually)
 - extremely inefficient (30-50 people do what usually 1 good person can do in startup) – so easy to escape unnoticed 😊
- what do you want to do with your life?

Startup: Compensation/Stock

- Salary: 15-30% lower than big corp
- what is equity? (stock, tokens etc)
- tricks related to equity
- what is it really worth it
- how much to ask for? 0.2%-3%.

Startup: why/how to found one

- + build MVP
- + don't be afraid to talk to hundreds of customers ASAP
 - every “customer” says good things because they are nice people
 - real test: will you pay me \$5000 now to use the software for a year
- patents are usually useless and waste allot of money
- funding
 - self-fund as long as possible
 - govt grants: SBIR, etc
 - try to stay away from venture capital until you have MVP and 1-2 customers

Small Company

Don't



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