Ph.D. in Computer Science: Why, How and From Where

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Outline

▸ Why get a Ph.D.

▸ How to get a Ph.D.

▸ From where to get it

▸ Conclusions

Why get a Ph.D.: Personal reasons

‣ Academic career

‣ Research career (whatever that means)

‣ Top $$$ (not necessarily)

‣ Want to be a high-tech entrepreneur (Strand Genomics, Google, Viaweb, Junglee, Cirrus Logic etc.)

‣ Want to become an expert in a field

‣ Ph.D. is highly regarded, I will be treated like a god (not necessarily)

Why get a Ph.D.: What to expect

▸ Expertise in your chosen area

▸ Invaluable training at solving unsolved problems

▸ You will know your limits (intelligence, perseverance etc.)

▸ Learn to cope with back-edges in work and life

▸ More career choices

▸ Develop good presentation and writing skills

▸ Have a lot of fun in the process

What is needed to get a Ph.D.

▸ Not all Ph.D.'s are brilliant and not all brilliant people have a Ph.D.

▸ Perseverance is the key, intelligence does not hurt

▸ Build on your strengths and work on your weaknesses (industry never pays you for the latter)

▸ Enjoy what you are doing: work hard, enjoyment will come auto-magically

▸ Develop a thick skin :)

Where to get a Ph.D. from?

‣ Does choice of place matter: It does to a certain extent

‣ Do highly established research groups help:
  ‣‣ You easily become part of the pipeline and graduate in a reasonable time
  ‣‣ In house tools and methodologies are available
  ‣‣ Easy to get papers accepted but no flexibility to move around
  ‣‣ Groping in the dark phase is minimal, problem is already well defined, at the end you may not be able to answer well, why you are doing what you are doing

‣ Chose a place which you are comfortable with or have heard good things about, other problems are solvable

Get a Ph.D. from India?

‣ You want to get placed in US only: Separate H1 quota for students from American Universities

‣ Pressure on publications at most American Universities: Some grad students have 20+ papers!

‣ Theory areas we are already one of the best, applied areas we are catching up

‣ Very good Ph.D. scholarships at IITs and IISc

‣ Working in already familiar surroundings, you can speed up your Ph.D.: conversion from B.Tech, ? M.Tech? and M.S. (Research)

Get a Ph.D. from India? .. (contd.)

- ▸ Domestic industry is maturing and CS Ph.D's are greatly in demand

- ▸ Fabulous domestic offers from industry: >13L starting salary + benefits (stock etc.), also the career gradient is (generally) quite steep

- ▸ Stay close to home (may not be important for some)

Ph.D. from IITD CSE

‣ Great faculty mix of senior and junior members, you get the best of both worlds

‣ Lots of collaboration, opportunities to learn a lot from other areas/domains

‣ Informal atmosphere, excellent availability of faculty, very open culture and superb infrastructure

‣ Equipment funding was never an issue and travel funding is no longer an issue

‣ Excellent opportunities for internships both in India and abroad (mostly Europe)

‣ Excellent placement record of research students

Conclusions

- ▸ If you want a Ph.D. get it now, coming back from the industry is very difficult
- ▸ IITD CSE is one of the best places to earn your Ph.D.
- ▸ Join in groups and create from scratch in untouched areas
- ▸ One possible way to repay your Alma matter
- ▸ Ph.D. is a maturing process. - *Anshul Kumar*
- ▸ If you learn through difficulty you learn more. - *S. C. Dutta Roy*

Interesting links

- Robert T Azuma's, "So Long and Thanks for The Ph.D.", *http://www.cs.unc.edu/~azuma/hitch4.html*

- Richard Hamming, "You and Your Research", *http://www.cs.virginia.edu/~robins/YouAndYourResearch.html*

- Pankaj Jalote, "Essays on Ph.D. and Research", *http://www.cse.iitk.ac.in/users/jalote/article_on_IT.html?#PhD*

- Paul Graham, "Essays on Startups", *http://www.paulgraham.com/articles.html*

Questions?