p h p E S P

Help

Survey of PhDs in CS and Engineering

Regarding taking an academic position in India

The number of Indians completing PhD each year in Computer Science is almost ten times in US as compared to in India. The ratio in other areas is perhaps similar. As Indian academia expands and moves more towards an R&D focus, it is important to attract these talented people back to Indian academics. As India on the whole is now professionally an exciting place particularly in IT related areas, despite many challenges and long road ahead, many believe that given the right opportunities, many Indians will prefer to return for positions in India.

This survey has a very focused scope of trying to understand more clearly, what is needed to attract talented Indian PhDs abroad to take up academic positions in India. The survey has a bias towards IT and Engineering.

1. Your discipline is:

CS	69.4%	(34)
EE	12.2%	(6)
HSS		(0)
Other engineering	18.4%	(9)
TOTAL	**100.0%**	**49 (49)**

2. How many years since you got your PhD. Minus means that many years to finishing PhD

15 to 10 years	6.1%	(3)
10 to 5 years	6.1%	(3)
5 to 0 years	38.8%	(19)
0 to -1 years	30.6%	(15)
less than -1 years	18.4%	(9)
TOTAL	**100.0%**	**49 (49)**

3. If institution housing is provided, what must be the quality of this housing:

Luxiruous		(0)
High end	22.4%	(11)
Uper middle class type	65.3%	(32)
Decent govt type	8.2%	(4)
Dont care	4.1%	(2)
TOTAL	**100.0%**	**49**

(49)

4. If housing of suitable quality is provided, what yearly personal salary will you require:

More than 15 Lacs	32.7%	(16)
10-15 Lacs	22.4%	(11)
8-10 Lacs	26.5%	(13)
5-8 Lacs	16.3%	(8)
3-5 Lacs	2.0%	(1)
TOTAL	**100.0%**	**49 (49)**

5. In an Institute provides some initial R&D grant, what is the level of this support that you will require:

25+ Lacs	16.3%	(8)
10+ Lacs	36.7%	(18)
5+ Lacs	30.6%	(15)
3+ Lacs	10.2%	(5)
Doesnt matter.	6.1%	(3)
TOTAL	**100.0%**	**49 (49)**

6. If an institute is willing to provide support for attending international conferences, how many international conference travels you would like the Institute to support:

2 each year for 3 years	44.9%	(22)
1 each year for 5 years	38.8%	(19)
1 every 2 years for 15 years	12.2%	(6)
One every three years for 30 years		(0)
None (each faculty should raise their own funds).	4.1%	(2)
TOTAL	**100.0%**	**49 (49)**

7. How important are these: 1-Extremely important, 5-Unimportant.

	Average rank 1 2 3 4 5	
The institute should have complete academic freedom on deciding courses, course contents, evaluations, etc:		(1.4)
The institute should have a PhD program:		(1.2)
The institute should have MTech programs:		(2.0)
The institute should ahve BTech programs:		(2.0)

8. Answer the fololwing: 1-Very positive, 2-positive, 3-Nutral, 4-Negative, 5-Strongly negative.

Average rank

	1 2 3 4 5	
Most Indian institutes work on a salary scale, where yearly increments are fixed. If an Institute has a proper yearly review and feedback mechanism for faculty, with some incentives based on this feedback, how would you feel about this:		(1.6)
Suppose an Institute has a tenure type system, where after some number of years, based on performance (and peer reviews) of the faculty, the job may become permanent. How do you feel about such a setup:		(1.7)

9. Suppose an institute provides flexibility to earn a summer salary through research projects (as is done in US) or work somewhere during summer. How important will this feature be for you:

Extremely important	46.9%	(23)
Very important	32.7%	(16)
Important	18.4%	(9)
Unimportant.	2.0%	(1)
TOTAL	**100.0%**	**49 (49)**

10. How important are supports like membership to a professional body, some book allowance, telephone allowance, etc. (each one of them is generally a few thousand rupees each):

Extremely important	36.7%	(18)
Very important	22.4%	(11)
Important	28.6%	(14)
Unimportant	12.2%	(6)
TOTAL	**100.0%**	**49 (49)**

11. List up to 3 other components you would like in your compensation package:

#	Response
1	(1) New Desktop + Laptop computer every 3 years. (2) Option of availing HRA or other equivalent if university housing is not used
1	- 9 month salary/job, with option to the faculty in summer, either to continue, or go elsewhere.
1	- Ability to attend top conferences if one publishes a paper there, irrespective of usual annual conference attendance grant, like at CSE@IITK - Cash rewards for students who are first authors for top international journals [again, like CSE@IITK] - Either free high speed internet access, or reimbursement for the same
1	1 - Research lab facilities 2 - Domestic travel reimbursement - for research purpose and conferences (2-3 per year)
1	1) support for 2 international conferences per year for 3 years is low! should be 2

each year for the duration of appointment. I wonder how easy it is to get grants for international conferences in India? 2) teaching load <= 2 "normal" courses per semester, normal means about 50 students per course. I know some colleges in india have upwards of 100 students per course (especially in introductory programming, OOP, SE etc)

1 1. Inflation compensation.

1 1. Institute should provide stipend for at least 2 of my PhD students initially. Stipend for PhD students should be competitive (with industry salaries) enough that it can attract some talented B.Tech/M.Tech students.

1 1. sabbatical 2. retirement plan (PF / APF) 3. perks like rental, city compensatoray, travel allowance, and leave fare concession; medical subsidies and allowance

1 1. Salary should be incremented in a proportion to the quality of publications and teaching of a faculty member. 2. Conference travels funding should be one on one basis so that if a person gets 5 papers accepted in top international conferences, he should be given the funding to travel. No questions asked. It works as an incentive. 3. If a person is a proven researcher with good contributions, then he/she should be given the funding to start a research lab or an entrepreneurship project from the institute.

1 1. Support to set up a lab 2. Support for funding PhDs 3. Infrastructure support

1 Comprehensive medical and dental insurance for self and dependents Opportunity to spend time at other Indian universities (like from one IIT to another) for a year, and still get paid. Opportunity for Ph. D. students to earn enough to be financially self-sufficient.

1 Fixed Pay (Basic salary, DA, HRA etc) Retirement benefits (PF, Pension scheme) Variable pay (performance based based on research impact, publications, student feedback, publications)

1 Freedom to choose graduate students. Dedicated lab space

1 Full medical coverage for self, spouse, children and parents.

1 Good medical insurance or mediclaim policy, Full support for travel to international conferences if they are of very high quality in addition to that provided already, Performance based additional increments

1 Health Benefits for whole family. Allowance/ reimbursement for children's education (limited to number of children (max. 2)) Allowance/reimbursement for joining a health club if such facilities are not available on campus.

1 Laboratory space for Ph.D and M.Tech students. Minimum administrative service for junior faculty. Health insurance and benefits for spouse, children and parents.

1 Low cost education in a good school for the children. A good savings and retirement plan. Good medical insurance.

1 Near total freedom in spending grant money in whatever manner the faculty chooses.

1 Not specific about the package. But would hope the package to compensate for the fluctuations in the economy in terms of living expenses.

1 Performance based salary, not age based Freedom and trust for professional travel and engagements

1 Relocation Startup money + lab space Travel support

1 Salary commensurate with industry as in US. Does not require a 12 month presence at the institute.

1 Startup funds for 2 years Lab space Reduced teaching load / graduate level course for attracting students on research topic

1 Support for 1 int. conf. every year

1 Travel allowance, Housing support and Promotion bonuses

1 Yearly Incentive pay based on international journal publication record

12. List up to 3 other characteristics/feature you would like in the Institute:

 # Response

1 (1) Promotion scheme should be a function of research output and student feedback and not merely number of years of service.

1 - Presence of, or collaboration with supercomputing centers to run large scale experiments - Strong culture of TAs for assist Instructors in their teaching load - A good feedback mechanism for teaching evaluations

1 - Quality of students should be top-notch. - Quality of colleagues should be top-notch (Probably a chicken and egg problem!)

1 1) democracy! - I mean many indian colleges are not administered well. A lot of importance is given to "seniority". There must be consultation among all faculty, and junior faculty should have a voice in all departmental decisions.

1 1) Pay very high salaries to individuals 2) Keep running costs low, facilities can be spartan, no A/C offices, no fancy buildings. Hire a financial advisor to get all numbers (salaries, costs etc.) right. 3) Let faculty raise research grants on their own rather than institute supporting them. Some initial grant can be given. Raising research funds is not a huge problem. Provide guidance to new faculty about it rather than just giving them a huge startup grant. (I personally had very good experience with DST).

1 1. Academic freedom for faculty 2. Freedom to consult privately (without using institute resources) + joint projects with industry (where institute resources are used and the institute gets to keep a percentage of money involved) 3. Tenure track system

1 1. active collaboration with the industry 2. doctoral/m-tech student fellowships tied to particular faculty 3. fair amount of autonomous operation

1 1. Freedom to recruit any student for PhD - no issues with admission like in the US 2. Flexible courses for students. Students should decide how many courses in each area they like and not follow a strict syllabus type scheme.

1 1. Importance to research and quality of infrastructure 2. No bureaucratic hassles to research/conference travels. 3. Should completely focus on quality of a faculty rather than seniority.

1 1. Joint appointments in multiple departments for researchers who conduct multi-disciplinary research. 2. Creating multi-university research initiatives. 3. Office space for all student members working under a particular faculty. 4. Consistent exposure to important science/scientists by way of invited talks.

1 1. PhD program 2. Top Ranked in the country 3. Other PhDs from US as faculty

1 1. Research based Institute 2. Independence for faculty in deciding structure of the course, assignments, and teaching methodology 3. Straightforward in

performance review process and no hierarchy discrimination

1 1. The entrance system should attract high quality students and faculty members 2. More focus on research than on coursework, for the faculty

1 A Center for Engineering Entrepreneurship - Incubation Cells for new companies created on campus Very good industry collaboration

1 A facility in the library for members to recommend books for purchase. A decision for purchase/ not purchase should be made immediately by library staff and, if the decision is to purchase, then the book should be procured within two to four weeks. Also, a facility for books not available in one library to be borrowed from another library (an inter-library acquisition). A corpus for funding research seminars by foreign scientists of repute, and distinguished lecture series. High-speed wireless internet.

1 Academic freedom Scope for collaboration

1 An active, vibrant Ph.D. and M. Tech programme, with stringent criteria for admission into these programs.

1 Collaboration between different disciplines

1 High quality PhD students High end computational facilities Like US universities, no restrictions in purchasing equipments from research budgets

1 Increased focus on socially challenging and impacting problems. Increased industry collaborations. Increased liberty to faculty to design innovative courses to match the current trends.

1 Interdisciplinary collaboration, limited bureaucracy, international partnerships

1 Less administrative processing in matters related to research, encouragement to research achievements through proper means, reduced administrative responsibilities in the initial years to provide enough time for research

1 Less bureaucratic red tape about research projects Assistance from staff/senior faculties in networking for industrial collaborations/clinical testing

1 More academic freedom Less administrative work More collaboration with other institutes

1 More interdisciplinary & intra-disciplinary collaboration

1 Nice working environment i.e. efficient support staff and well-qualified faculty. Good students i.e. sound admission system and ability to maintain discipline on campus with no student unions or so. Clear vision for the institute.

1 open and supportive atmosphere possibility to set up state-of-the-art labs elimination of unnecessary bureaucratic hurdles

1 Strong focus on research (high quality faculty, PhD faculty) Strong graduate program (MS by research, PhD program) Decent campus and facilities, attractive for students, staff and faculty

1 The ability to perform consultation services Department should allow MTech and PhD students to act as teaching assistants (TA). Allow sabbatical leaves to other institutes (foreign and national) or research labs (foreign and national).

13. Mention anything else which will facilitate you returning and taking up an academic position in India.

 # Response

1 - As a faculty member, what I would want is good quality of students, whether in the classroom or in the research lab. The entrance mechanism for each stream

[B.Tech, M.Tech, PhD] should ensure that in order for the faculty to have a fulfilling life.

1 1. Good institute funding for research 2. A good set of peer faculty members

1 3-4 months sabbatical every two years, 1yr. sabbatical every five years

1 A nice compensation package offering a decent lifestyle (even though less than industries). Workplace free from political influences.

1 An environment that is encouraging to new ideas and supports a healthy competition

1 Arrange for interested people to spend short time to judge the environment. Depending on the time, they can either offer a course, or give guest lectures in an existing course.

1 Funding for high risk- high gain research

1 Good tie up with Industry R&D projects. Mix of undergraduate and graduate course work to be taught by faculty. Typically undergraduate courses are impose a higher workload on the faculty, so one semester of undergraduate course followed by another semester of graduate course would be very helpful. Since we are trying to come up with a good environment for faculty, things should not be rigid.

1 Graduate students and excellent research environment.

1 Help with relocation (not just financial, but also administrative, and with things like getting a gas connection, etc.) Option of low teaching load for any two years in the first seven.

1 I am already in India, joining Infosys Setlabs...

1 I returned and subsequently gave up academics due to family obligations. I quite enjoyed my successful stint in academics. Salary was the only reason I left.

1 I should be allowed to do research. That's the primary concern.

1 In general, reduced dependence on the government and reduced control by the government (policies) would make the universities more forward looking. If we want to breed excellence for tomorrow, we should reduce such hindrances today. If an institute has an aggressive agenda and vision for the future, it will be a plus.

1 Lesser turn-around time for recruitment

1 Location - being close to home (kolkata)

1 more information about funding opportunities/agencies, opportunity for summer/semester long visits (at own cost or with shared costs like on campus housing assistance) - this is important because there is a certain reluctance in relocating to big cities like Mumbai or smaller towns like Guwahati for faculty not originally from the region.

1 More Interaction with faculty members during the final years of Ph.D to ease the interview process. Interacting with the student during their Ph.D years itself would help the institute as well as the candidate to know each other better.

1 Most important point is a good compensation package and freedom to pursue my own research agenda.

1 None. If the above are available it would be very interesting.

1 One of the most important is our professionalism. We always tend to give importance to work that is done outside India and look-down-upon a faculty/person who is doing great work in own institute. Apart from some IIT's

the bureaucratic issues are too much. Quota to bring in people in as faculty or students who even do not match the quality of others is a curse, and it reduces professionalism to casteism. Believe if such things are taken care of (which is a hard problem) some people who want to get back would definitely get back. Otherwise who would like to see that even though you are doing much better research than another person brought in as quota, both of you are treated well... let us be capitalist in terms of the economy of knowledge and intellectual capabilities.

1 Primarily, salary has to be in the Rs 10-15 lakhs range for starting Assistant Professor. In any CS/EE related industry, the US-India geographic salary difference is 30% for jobs requiring BTech/MS degrees and 50% for PhD degrees. Starting assistant professors in CS/EE in the top 25 US schools make on average 80k during a 9 month period. a 50% equivalent would be Rs 20 lakhs. When the "return to India" phenomenon is pretty slow even in the industry sector which pays 30-50% of US salaries, the top schools in India should pay at least 25% of US salaries to expect similar returns.

1 quick decision making on part of the institutions Feeling that the institute wants to recruit talent

1 salary better than current scale funding for conference travel

1 serious need for research and teaching faculty equal flow of govt and industrial grants genuine focus on creating graduates with abilities to solve today's problems

1 The BIGGEST feature would be merit based appointments of faculty. I am a graduate student at Caltech and am considering making the move back to academia in India and one of the biggest fears is having SC/ST based appointment for faculty. If that happens, India will loose a significant share of researchers who would have otherwise liked to join.

1 Travel support for at least one international conference/year and publication charges for 2 papers/year in top quality journals. (this is an issue in my field where top journals levy publication charges)

Please give your feedback by Nov 30, 2008. All feedbacks received till then will be analyzed, and a short report will be posted on IIIT Delhi's site in first week of December. For any queries/suggestions plase mail to Prof. Pankaj Jalote.

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