

# ACM India



## Ph.D. Production Survey Report: 2017-18 and 2018-19

October 2020

ACM India conducts a Ph.D. production survey to assess the strength of Ph.D. production in the areas of Computer Science and Information Technology in India. Last survey was done for the academic year 2016-17 and is available online from the ACM India website<sup>1</sup>.

It was decided by the ACM India Council to make this survey biennial in the year 2018. This report contains data and results of the survey for the academic years 2017-18 and 2018-19. We report data regarding Ph.D. production from 1st August 2017 till 31st July 2019, spanning two consecutive academic years in this document. The survey includes Computer Science and Information Technology/Science departments of prominent institutions in the country. The list of institutions included in the survey is carried forward from earlier surveys, with the new institutions in a category added to the earlier list.

### Process followed for administering the survey

This section details the process steps that were followed for administering the survey. The survey was initiated in the month of January 2020, using the online survey platform SurveyMonkey.

1. Creation of exclusive gmail account for administering the survey, `ACM.India.PhD.Survey@gmail.com`. The same account can be used for subsequent surveys too.
2. Updating of the list of contacts of HODs, Directors, Deans of various institutions from last year's survey. Addition of new IITs and NITs

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<sup>1</sup>Refer to [https://india.acm.org/binaries/content/assets/india/education/phdproductionreport2016\\_17.pdf](https://india.acm.org/binaries/content/assets/india/education/phdproductionreport2016_17.pdf).

to the list. The final list had 169 contact details of 160 institutions, with some institutions having more than one contact person and/or departments and their respective email ids. The list of institutions included for the survey is provided in Appendix A.

3. Subscribing to a monthly paid subscription plan of SurveyMonkey. This was necessary as the number of recipients of the survey were estimated to be 169 and the free license caps the number of recipients at 100.
4. Configuring the survey on the SurveyMonkey platform and emailing all the contacts in the list. A copy of the list of questions of the survey is provided in Appendix B.
5. The survey was kept open for 40 days, with two reminders sent to the non-respondents during the span of 40 days. Subsequently, the survey was further extended by a period of three months, with additional email reminders sent from the gmail address and also individual emails sent by the administrators to head of departments/chairman of older IITs. The survey link was also sent to all ACM India Student Chapters, requesting them to follow up with their respective institutions, if present in the list, to respond to the survey.
6. As the final step, we manually collated data from the websites some departments and institutions, containing a list of Ph.D. alumni, to the extent available.

## Response to the survey

Only 16 institutions responded to the survey, the institutions from whom responses were received have been kept in category **Group A**. This is consistent with the response percentage of earlier Ph.D. production surveys and has been very low. The reason for low response is not clear, we attribute it to lack of interest in responding to the survey. We collated data for a few institutions from the information available in their websites, such institutions have been kept in category **Group B**. All other institutions, i.e., those that didn't provide data by responding to the survey and no information, as required for the survey, available in their institute/department websites are under category **Group C**. Appendix A contains the complete list of institutions considered for the survey along with their grouping as detailed here.

Response from institutions in **Group A** and **Group B** were considered as provided (through response and from their website, respectively) and for **Group C**, we have not provided any data. For institutions in Group B, information provided might not be fully accurate as it was collated based on data available in their websites.

We now list the responses to each of the questions below. It is to be noted that for institutions in **Group B**, we couldn't obtain data for certain questions, for e.g., the question involving challenges faced in the Ph.D. program and hence, we have left the corresponding details empty.

**Question 1** *Name of the University/Department/Institution.*

Grouped into categories and listed in Appendix A.

**Questions 2 and 3** *Name and Email ID of HOD/Chair of the Computer Science/Information Technology department*

Answers used to correct source data that was used, for those who responded. There were no corrections to be done.

**Questions 4 and 5** *Number of full-time faculty members with (without) a Ph.D. degree in the CS/IT department*

Institute	Faculty (Ph.D.)	Faculty (Non Ph.D.)
IET, Ahmedabad University	13	2
Chennai Mathematical Institute	11	0
Delhi University (Main Campus)	8	6
DAIICT	30	0
East West Institute of Technology	5	20
IIT Bangalore	36	0
IIT Delhi	28	1
IIT Hyderabad	48	2
IISc (Dept. of CSA)	38	0
IIT Delhi	34	0
IIT Dharwad	9	–
IIT Guwahati	29	0
IIT Indore	11	0
IIT Kharagpur, CSE Dept.	38	1
IMSc	9	0
Jamia Hamdard	20	11
Mumbai University, CSE	2	1
PSG College of Technology	14	15
SSBT's College of Engg. & Tech. (CS)	3	15
Vidyalankar Institute of Technology	3	22

**Questions 8 and 9** *Number of Ph.D.s awarded from the CS/IT Department in the past two academic years and number of male and female graduates.*

The number of male and female graduates are given within parentheses, in order, adding up to the number of Ph.D. graduates.

IET, Ahmedabad University	2 (1+1)
Chennai Mathematical Institute	7 (6+1)
Delhi University (Main Campus)	16 (2+14)
DAIICT	18 (11+7)
East West Institute of Technology	3
IIT Bangalore	14 (8+6)
IIT Delhi	20 (13+7)
IIT Hyderabad	17 (12+5)
IISc (Dept. of CSA)	34 (26+8)
IIT Delhi	17 (12+5)
IIT Dharwad	0
IIT Guwahati	14 (11+3)
IIT Indore	14 (12+2)
IIT Kharagpur	25 (19+6)
IMSc	11 (10+1)
Jamia Hamdard	10 (9+1)
Mumbai University, CSE	5 (1+4)
PSG College of Technology	4 (0+4)
SSBT's College of Engg. & Tech. (CS)	0
Vidyalankar Institute of Technology	3 (1+2)

**Question 10** *Out of the students graduated, how many are faculty members in the same university/institute?*

IET, Ahmedabad University	None.
Chennai Mathematical Institute	None.
Delhi University (Main Campus)	12
DAIICT	None.
East West Institute of Technology	1
IIIT Bangalore	None.
IIIT Delhi	None.
IIIT Hyderabad	None.
IISc (Dept. of CSA)	None.
IIT Delhi	N/A
IIT Dharwad	N/A
IIT Guwahati	N/A
IIT Indore	0
IIT Kharagpur	None.
IMSc	None.
Jamia Hamdard	6
Mumbai University, CSE	2
PSG College of Technology	1
SSBT's College of Engg. & Tech. (CS)	N/A
Vidyalankar Institute of Technology	3

**Question 12** *Nature of post Ph.D. employment*

A majority of the graduated research scholars were involved in teaching within India, followed by an equal number of scholars pursuing post-doctoral research abroad or working for a research lab either in India or abroad.

**Question 13** *Number of full-time and part-time Ph.D. students enrolled*

Institute	Full-time Scholars	Part-time Scholars
IET, Ahmedabad University	12	11
Chennai Mathematical Institute	15	1
Delhi University (Main Campus)	11	0
DAIICT	48	12
East West Institute of Technology	2	9
IIIT Bangalore	17	13
IIIT Delhi	84	0
IIIT Hyderabad	80	32
IISc (Dept. of CSA)	76	N/A
IIT Delhi	31	N/A
IIT Dharwad	3	0
IIT Indore	11	0
IIT Kharagpur, CSE Dept.	128	2
IMSc	14	0
Jamia Hamdard	10	4
Mumbai University, CSE	1	22
PSG College of Technology	5	30
SSBT's College of Engg. & Tech. (CS)	0	8
Vidyalankar Institute of Technology	5	0

**Question 14** *Average monthly stipend (in INR) of a Ph.D. student*

IET, Ahmedabad University	25000
Chennai Mathematical Institute	32000
Delhi University (Main Campus)	25000 (JRF), 8000 (Non-NET)
DAIICT	28000
East West Institute of Technology	25000
IIIT Bangalore	30750
IIIT Delhi	33000
IIIT Hyderabad	25000
IIT Dharwad	28000
IIT Indore	33500
IIT Kharagpur	35000
Jamia Hamdard	8000
Mumbai University, CSE	8000
PSG College of Technology	12000
SSBT's College of Engg. & Tech. (CS)	
Vidyalankar Institute of Technology	N/A

**Question 15** *Three main challenges for your Ph.D. program*

Listing challenges without mapping it to the institution.

- Lack of sponsored projects from Govt. and private organizations, lack of collaboration with industries and top universities, How to captivate good students to enroll for the Ph.D. program?
- Grabbing admission to reputed colleges, less number of guides available, difficulty in preparing SOP.
- Procuring advanced tools, setting up of state-of-the-art infrastructure, getting expert hands to guide.
- Getting good applications, most of them intended to do work in machine learning, many of them would like to do part time.
- Attracting more full-time students, enabling part-time students to meet milestones in timely manner.
- The availability of lucrative IT jobs in the vicinity, after graduation and post-graduation, makes it hard to find motivated and talented applicants for the PhD program. We expect world class research in CS/IT and this requires our students to undergo a rigorous and long period of training. Lucrative IT jobs in the vicinity also makes it hard to retain students in the Ph. D. program after adequate training.
- Critical thinking, research ethics, time management.
- Completing coursework due to less number of faculties. There is no structured coursework as of now. Lack of support for national/international travel for conferences and workshops for students. Not many researchers in the institute in respective areas for more discussions and collaborations to take place.
- Infrastructure.
- Funding issues, writing thesis/paper.
- Getting a good number of Ph. D. students who can be enrolled.
- More part-time scholars, quality research, quality publications.
- Lack of good quality students.
- Unavailability of good self motivated students, increasing number of drop-outs during first 2 years of PhD, less external fellowship opportunities for PhDs.
- Quality of students, financial support, visibility of the University.
- Scholars don't take it as a full time assignment. Generally female candidates get admission based upon their merit. However their family responsibility and lack of support at home as well as

workplace is the biggest hurdle for them in devoting time to this work. Persistence in going for high quality publications is lacking. People are interested in degree and not in the reputation and taking their research ahead. Time constraint of 3 to 5 years for completing the work is not feasible for coming up with some innovations and establishing their worth and publishing patents and papers.

## Conclusion

The report provides summary of data as collected towards a survey to access the nature of Ph.D. production in the area of Computer Science in India. Like earlier surveys, due to the poor nature of response, the findings provide data to the extent collated and is partly incomplete due to missing data. We believe that the need for such a survey in view of the lack of responses needs to be critically evaluated and subsequent surveys should design and implement strategies to collect data from a large number of respondents. This will improve the effectiveness of the survey and enable the findings to feed information to other sources.

Meenakshi D'Souza, IIIT-Bangalore, Member, ACM India Council.  
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## Appendix A

List of institutions, categorized into three groups, **Group A** (institutions that provided data in response to the survey), **Group B** (data collated from the institution or department's website), **Group C** (no data available in public domain).

<b>Group A</b>	Institute of Engineering and Technology, Ahmedabad University
	Chennai Mathematical Institute
	Delhi University (Main Campus)
	Dhirubhai Ambani Institute of Information and Communication Technology
	East West Institute of Technology
	IIT Bangalore
	IIT Delhi
	IIT Hyderabad
	IIT Dharwad
	IIT Indore, CSE Department
	IIT Kharagpur, CSE Department
	Jamia Hamdard
	Mumbai University, CSE
	PSG College of Technology
	SSBT's College of Engineering and Technology (CS)
Vidyalankar Institute of Technology	

<b>Group B</b>	IISc (Dept. of Computer Science & Automation)
	IIT Delhi
	IIT Guwahati
	IISc

<b>Group C</b>	AIT Technical Campus
	Akshaya College of Engineering and Technology
	Aligarh Muslim University, Department of Computer Science
	Aligarh Muslim University, Department of Computer Engineering
	Amity School of Engineering and Technology
	Amrita University
	Andhra University College of Engineering
	Anna University
	Asian School of Technology
	Aurangabad College of Engineering
	Avinashilingam Deemed University for Women
	BHU IT
	Bengal Science and Engineering University
	BITS Pilani
	BITS Mesra
	Bapuji Institute of Engineering and Technology
	Bengal Engineering and Science University, Shibpur
	College of Technology and Engineering, Udaipur
	Delhi Technological University
	Dept. of Computer Science and Applns., Kurukshetra University
	Dept. of Studies in Computer Science, University Of Mysore
	Desh Bhagat Foundation Group of Institutions, Moga
	Don Bosco College of Engineering and Technology
	Dr. B.R Ambedkar National Institute of Technology, Jalandar
	Dr C.V Raman Institute of Science and Technology
	GITM Institute of Technology
	Goduati Engineering College For Women
	Government College of Technology, Coimbatore
	Guru Gobind Singh Indraprastha University
	Guru Nanak Dev Engineering College
	Guru Teg Bahadur Khalsa Institute of Engg. & Technology
	IIT Allahabad
	IITB-Monash Research Academy
	ISI Kolkata
	IIT Bhubaneswar
	IIT Bombay
	IIT Gandhinagar
	IIT Hyderabad
	IIT Kanpur

<b>Group C</b> continued.	IIT Madras
	IIT Mandi
	IIT Patna
	IIT Jodhpur
	IIT Roorkee
	IIT Ropar
	IIT Palakkad
	IIT (BHU), Varanasi
	IIT Tirupati
	IIT Bhilai
	IIT Goa
	IIT Jammu
	IIT, ISM, Dhanbad
	Institute Of Engineering Jiwaji University, Gwalior
	Institute of Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur
	Institute of Mathematical Sciences Chennai
	Jamia Millia Islamia, CS, CE
	JIIT Noida
	JNTUH College of Engineering Hyderabad
	K S R Institute For Engineering And Technology
	K S Rangasamy Institute of Technology, IT, CSE
	K. L. E. Society's College of Engg & Technology, Belgaum
	K.V.G. College of Engineering
	LMNIIT, Jaipur
	MNNIT Allahabad
	Madan Mohan Malvia Engineering College
	Madhav Institute of Technology & Science
	Maharashtra Institute of Technology, Pune
	Manonmaniam Sundaranar University
	Mumbai University, Information Technology
	NIT Agartala
	NIT Bhopal
	NIT Calicut
	NIT Durgapur
	NIT Goa
	NIT Hamirpur
	NIT Jamshedpur
	Madan Mohan Malvia Engineering College
	NIT Kurukshetra, Computer application
	NIT Kurukshetra, Computer Engineering
	NIT Meghalaya

<b>Group C</b> continued.	NIT Raipur, CSE
	NIT Raipur, IT
	NIT Rourkela
	NIT Silchar
	NIT Surathkal, Information Technology
	NIT Surathkal, CSE
	NIT Trichy
	NIT Warangal
	National Instn. of Technical Teachers Training & Research
	Netaji Subhas Institute of Technology
	Padmashree Dr. D. Y. Patil Institute of Engg. & Technology
	Rajeev Gandhi Proudlyogiki Mahavidyalaya
	Ramrao Adik Institute of Technology
	Sant Longowal Institute of Engineering and Technology
	Sardar Patel College of Technology, MCA, CSE
	School of Computer Sciences, Mahatma Gandhi University
	Shobhit Institute of Engg. & Technology
	Shri G.S Institute of Tech. and Science
	Shri Guru Gobind Singhji Institute of Engg & Technology
	Shridevi Institute of Engineering and Technology, ISE, CSE
	Sir M. Visvesvaraya Institute of Technology, ISE, CSE
	SJB Institute of Technology, ISE, CSE
	SNDT Womens University
	SNS College of Technology, CSE
	Sona College of Technology
	Sri Jayachamarajendra College of Engineering, CSE, ISE
	Swami Vivekanand Institute of Technology, Sagar
	Symbiosis Institute of Technology
	Thapar University
	Thiagrajan College of Engineering
	TIFR
	University Institute of Engineering and Technology
	University of Hyderabad
	University of Pune
	Veer Surendra Sai University of Technology, Burla
	Vishwakarma Institute of Information Technology
Vishwakarma Institute of Technology	
Visvesvaraya National Institute of Technology Nagpur	

## Appendix B

The survey had 15 questions, which are listed below, in order.

1. What is the name of your University/Department/Institution?

2. What is the name of the HOD/Chair for the Computer Science or Information Technology department?
3. What is the email id of the HOD/Chair of the CS/IT department?
4. What is the number of full-time faculty members with PhD in the CS/IT department?
5. What is the number of full-time faculty members without a PhD in the CS/IT department?
6. Please provide a webpage link containing the CS/IT Department or Institution information.
7. Please provide a webpage link containing the list of faculty members of CS/IT Department or Institution.
8. What is the number of Ph. Ds awarded from the CS/IT department in the past two recent academic years (Aug 1, 2017 to July 31, 2019)?
9. Out of the total number in the above question, please mention the number of males and the number of females.
10. Out of the PhD students graduated from your University/Institute in the past two academic years, how many are faculty members in your University/Institute?
11. Please provide a webpage link containing the list of PhD students enrolled.
12. For each Ph. D. student graduated in the past two academic years, provide the broad area of PhD and nature of post Ph. D. employment.
13. What is the total number of PhD students enrolled in the department and how many out of these are part time students?
14. What is the average monthly stipend (in INR) of a Ph. D. student in your institute?
15. Please list three main challenges for your Ph. D. program.