



REPORT ON

CYBERSECURITY SKILLS

LAUNCHED AT:

FMANG



Data led ground-up insights developed using NLP and AI/ML technology

... Powered by MITIBASE Platform

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Purpose & Objectives

The country's security needs and the cybersecurity industry's growth are critically dependent on its ability to develop cybersecurity skills. The current information around the demand and supply of cybersecurity skills is not specific and objective. The advent of data science, machine learning, NLP, and artificial intelligence enables detailed, comprehensive, and insightful data. These technologies help achieve the following objectives regarding cybersecurity skills' demand and supply.



Methodology

Enterprises are increasingly employing digital channels to advertise job openings. They post it on their website. They rely on job listing platforms. For specific recruitment drives, they make public announcements. On the other end, academic institutions also use the online medium to inform and advertise their courseware. Digital records of demand and supply of cybersecurity skills are increasingly available. DSCI and NASSCOM FutureSkills, with the help of the Mitibase platform, conducted an exercise to compile the data. We have created a model illustrated in the figure below to get insights into cybersecurity job openings. The model was also used to gain visibility over academic institutions' specific efforts in developing cybersecurity skills.



Cybersecurity Skills: Snapshot

The data collection and machine learning exercise carried by DSCI and NASSCOM FutureSkills reveal the following insights into the demand of cybersecurity professionals.

Demand



Across Diverse Industry Segments and Roles

- This number 53,000 doesn't include freshers hiring
- Computer science engineers are preferred for these jobs
- Supplier ecosystem may be filling the Demand
- Within enterprise, reskilling / upskilling is used to fill the gap



Cybersecurity Skills - Demand

- IT Services/BPM leads in the consumption of cybersecurity skills, reflecting the rising export of cybersecurity services & an increase in domestic demand.
- Global Capability Centres (GCCs) follow the IT Services/BPM with 18% share and the User industry with 14% share.
- 5300 jobs out of 53000 are OEM specific jobs.
- Security product companies create additional 11,000 development jobs.



- The most advertised security job is 'Analyst.' However, there is a significant demand for Security Operations, Threat Management, Security Management, Identity & Access Management.
- It is noteworthy to see the emergence of data privacy and resiliency in job advertisements.
- It is encouraging to see the demand for jobs in niche areas such as Digital Forensics, Hardware/IoT Security, Cryptography.
- Delhi/ NCR leads in creating demand for cybersecurity skills, followed by Bengaluru, Mumbai, Chennai, and Hyderabad.
- The research indicates that among the OEM specific job openings, IBM security technology job roles lead the pack, followed by Symantec, Palo Alto, Oracle, McAfee, and CISCO technologies.





Cybersecurity Education

Computer science engineers are preferred for cybersecurity jobs. The data collection and machine learning exercise carried by DSCI and NASSCOM FutureSkills focused on specific efforts undertaken for cybersecurity education.

Supply

10,000 Diploma, UG, PG Intakes	Identified in last 3 Months	It is encouraging to know that the Indian Educational Ecosystem is focusing on specialized
Specialized across diverse type of Academic Institutions		courses /disciplines in cybersecurity education





education

184

Offering Cybersecurity Courses in the country

Universities/Institutes



Leading Supply Destinations (Citywise)

Leading Supply Destinations (Statewise)



- Total 184 out of 4000 plus scanned universities/institutes offer cybersecurity education.
- 62% of institutions offer undergraduate level courses, while 26% offer postgraduate level courses.
- The private universities and state institutions are leading the education at the Bachelor's level.
- Tamil Nadu leads in producing Cybersecurity skills, followed by Karnataka, Uttarakhand, and Maharashtra.
- In terms of cities, Chennai leads in producing skills, followed by Bengaluru and Dehradun.







Interactive Dashboard & Insights

Ground-up data-led work allows us to get insights at a decomposed level to suit analytical urge. An interactive dashboard developed using this work has thrown up interesting facts. Some representative examples are as below.

GCC

Hires primarily in Bengaluru, NCR, & Hyderabad

Hardware & IoT

Bengaluru leads the demand

Govt & PSUs are leading consumers of this skill

Coimbatore

One of the largest producers of Master's in Cyber Security

User Industry

Hires for Threat Mgmt., Operations, Identity & Privacy

Dehradun

Produces significant number of Bachelor's in cyber security

Central

Universities primarily focus on Master's Program



Next Steps

DSCI and NASSCOM FutureSkills would like to continue this work to bring in more specificity, objectivity, and granularity in India's demand-supply gap of cybersecurity skills. We will keep refining the model to add more dimensions for better insights. It would be made available to industry, academia, policymakers, and individual aspirants.

For any suggestions and feedback, please write to us: <futureskills@nasscom.in>



Disclaimer

The insights presented here are based on publicly available information. The outcome is devised based on an exercise that ran for a limited period (3 months). The accuracy of the outcome is a factor of digital reality presented by supply and demand generating organizations. The result is also an outcome of DSCI and NASSCOM FutureSkills' work on compiling and mapping job roles. If such underlying exercises are refined, and the model is trained for a longer duration, the result would be more accurate.







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