2023

Global Skills Report

ASIA PACIFIC

coursera

Foreword from our CEO, Jeff Maggioncalda

Since the beginning of the year, generative artificial intelligence (AI) has dominated my dialogues with leaders globally, spotlighting its impending effect on jobs, skills, and education.

I'm proud to present our fifth annual Global Skills Report, which draws on data from millions of learners on Coursera to help leaders in business, government, and higher education understand the rapidly changing skills landscape and talent distribution worldwide.

Digital transformation, automation, and globalization are reshaping the labor market and creating an unprecedented need for reskilling and upskilling. Generative AI intensifies this urgency,[1] posing a threat to a new class of knowledge workers. The World Economic Forum's Future of Jobs Report predicts that over 60% of workers will need retraining between now and 2027, but only half of these workers have access to adequate training opportunities.[2]

Public and private sector leaders must work together to respond to new workforce needs at the speed and scale demanded by our changing world. Governments and higher education institutions need to offer workforce development and academic programs that address job dislocation and unemployment while preparing workers for job opportunities created by new technologies. At the same time, employers can adopt a skills-focused approach to expand their hiring pipelines and create reskilling pathways for workers at risk.

To do this, leaders need a clear understanding of their workforce's strengths and potential development areas. The Global Skills Report reveals, for example, that learners in Latin America and the Caribbean are leading the world when it comes to average scores in data science and technology skills—marking the region as a rising hub for tech talent. Additionally, Professional Certificates—a type of micro-credential 76% of employers find valuable[3]—see high year-over-year enrollment growth in the Philippines, Brazil, and Spain.

With over 120 million learners, 7,000 institutions, and 5,400 courses from 300 of the world's top universities and industry partners, Coursera has one of the largest data sets for identifying and measuring skill trends. We hope this report offers leaders a starting point for navigating change and disruption. Together, businesses, governments, and higher institutions can create a world where anyone, anywhere has the power to transform their lives through learning.

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Introduction

Lochan Khullar, India
Coursera Learner

Executive Summary

What is the state of the global skills and credentials landscape?

The Global Skills Report 2023 presents data on 100 countries drawn from Coursera's registered learner base of more than 124 million learners. We concentrate on three of the most popular, job-relevant skill domains: business, technology, and data science. We use this data to illustrate regional and national trends around talent skill proficiency and opportunity.

Learners on Coursera acquire skills by engaging with content from 275 leading universities and companies. We offer a range of formats to meet different skill needs—from hands-on projects and courses to job-ready certificate and degree programs.

Whether you're a workforce development, higher education, or business leader, this report will help you answer three questions:

- **How proficient is your workforce in critical job skills?**
- **What skills are popular among learners in your country or region?**
- **How much of your workforce is preparing for in-demand, digital roles?**

KEY FINDINGS:

1. Economic growth is tied to skill proficiency
2. Internet access is tied to economic opportunity
3. Learners in high-income countries are more likely to invest in learning human skills
4. Learners with postgraduate education are most likely to invest in AI-related skills
5. Many countries are closing the gender gap in online learning
6. Learners around the world are preparing for digital roles with Professional Certificates
7. Skilled talent can be found around the world

1 ECONOMIC GROWTH IS TIED TO SKILL PROFICIENCY

There are strong correlations between higher skill proficiency and economic advances like human capital potential[4] and innovation.[5] Notably, the combined Average GDP per Capita of countries where learners have demonstrated cutting-edge proficiency scores is roughly four times higher than that of countries where learners are falling behind in skill proficiencies.

INSIGHTS IN ACTION: Businesses, government, and higher education leaders investing in the skills development of their people are investing in greater economic and social advantages, often through employment. The 2023 Coursera Learner Outcomes Report found that 85% of learners enroll in courses on Coursera to land their first professional role, switch careers, or advance in their current role. Furthermore, 77% of learners have reported a beneficial impact on their career from completing their most recent course or program.[6]

2 INTERNET ACCESS IS TIED TO ECONOMIC OPPORTUNITY

Online learning makes it possible for more individuals to access educational opportunities that lead to better job prospects, particularly amid the rise of remote work. Countries where learners have competitive and cutting-edge overall skill proficiency scores also have higher average internet scores than countries where learners have lagging and limited scores, highlighting the role of internet and online learning in driving economic growth.

INSIGHTS IN ACTION: By investing in broadband and digital skills training in partnership with the private sector, governments can unlock new remote job opportunities for locals without them ever having to leave home. For instance, Rwanda's Ministry of Information and Communications Technology and Innovation launched the MTN Skills Academy in partnership with MTN, Africa's largest mobile network operator, and Coursera. This program aims to provide people in impoverished communities across Sub-Saharan Africa with free internet devices and online training for digital jobs.

3 LEARNERS IN HIGH-INCOME COUNTRIES ARE MORE LIKELY TO INVEST IN LEARNING HUMAN SKILLS

In comparison to middle- and low-income countries, learners in high-income countries are more likely to invest in skills that cannot easily be automated, such as project management, change management, and collaboration. Meanwhile, learners in middle-income countries are more likely to invest in digital skills, such as software architecture, mobile development, and programming principles, which may enable them to participate in local and remote talent opportunities that require digital skills.

INSIGHTS IN ACTION: A resilient workforce needs a combination of both digital and human skills: both to harness the opportunities of automation and to side-step its repercussions. Digital skills hold the promise of higher income and greater career opportunities.[8] Meanwhile, human skills like analytical judgment, flexibility, and emotional intelligence are essential for employees in an AI-powered future.[9] Business, government, and higher education institutions must drive skills development for both.

> "MTN wants a prosperous Africa; one in which everyone benefits from a modern connected life. Our work is inextricably linked to the wellbeing of the communities we serve. With the MTN Skills Academy, Africans can prepare for emerging careers at unprecedented speed and scale, contributing significantly to solving the unemployment challenges the continent faces.

Nompilo Morafo
Chief Sustainability & Corporate Affairs Officer, MTN Group[7]

4 LEARNERS WITH POSTGRADUATE EDUCATION ARE MOST LIKELY TO INVEST IN AI-RELATED SKILLS

Learners with a postgraduate degree are more likely to learn skills that drive the development and research of AI, including skills such as artificial neural networks, applied machine learning, and computer vision, in comparison to learners with less education.

INSIGHTS IN ACTION: Almost everyone will need some level of AI proficiency in the future. Up to 49% of workers could have half or more of their tasks impacted by large language models like those that power ChatGPT.[10] A recent survey of UK employers also found that 67% of respondents believe it will be important for candidates to have AI skills, experience, or qualifications.[11] Fortunately, learners without postgraduate degrees are already investing in some of the foundational skills needed to work with AI, like data analysis and computer programming. To ensure competitiveness, regional leaders should continue investing in foundational AI-related skill training for their workforce.

5 MANY COUNTRIES ARE CLOSING THE GENDER GAP IN ONLINE LEARNING

On average, only 43% of Coursera learners from the countries covered in this report identify as women. Canada (55%) has one of the highest percentages of learners who are women on the Coursera platform. Other countries that have achieved fifty-fifty parity in access to online learning include the Philippines (51%), Thailand (51%), Mexico (51%), and Spain (50%). The share of STEM-related certificate enrollments from women increased from 25% in 2019 to 38% in 2022.

INSIGHTS IN ACTION: To enhance social and economic mobility for women, collaboration among governments, businesses, and higher education institutions is crucial. Leaders should invest in free online STEM education programs for women and girls and offer vital support services like broadband access, local mentorship, and job placement. Governments, including the Guyana Ministry of Health and Human Services and the U.K. Girls' Education Skills Partnership, are offering tens of thousands of scholarships for women and girls in emerging economies to develop skills on Coursera.[12]

> "The Girls' Education Skills Partnership exemplifies the commitment of the U.K. government and the private sector in addressing the critical gap in skilling girls for 21st century opportunities.
>
> **Kevin Frey**
> Chief Executive Officer, Generation Unlimited

6 LEARNERS AROUND THE WORLD ARE PREPARING FOR DIGITAL ROLES WITH PROFESSIONAL CERTIFICATES

Global demand for Professional Certificates is surging year-over-year (YOY), particularly in Sub-Saharan Africa (80%), the Asia Pacific region (69%), and North America (53%). The highest growth rates are in the Philippines (253%), Pakistan (228%), and Brazil (171%). The United States leads in overall Professional Certificate enrollment with 1.3 million enrollments, followed by India (654,000) and Nigeria (142,000). Notably, low-income countries experience the greatest enrollment growth, while high-income countries have the highest overall enrollments.

INSIGHTS IN ACTION: Institutions must help displaced workers transition into new careers by focusing on skills-based hiring and learning. Micro-credentials, in particular, are effective in preparing talent for new and emerging careers.[13] For instance, the Ministry of Science and Education in the Republic of Kazakhstan launched a nationwide initiative to prepare 20,000 students and faculty across 25 public universities for the digital economy by embedding over 600 career credentials into degree programs.[14]

7 SKILLED TALENT CAN BE FOUND AROUND THE WORLD

Europe leads the global skill rankings with eight of the top ten countries. The remaining two are Indonesia and Japan. European learners excel in business skills, while those in Latin America and the Caribbean lead in technology and data science. Strengths can be found across regions and countries. For example, learners in Botswana demonstrate high proficiency in business skills, and learners in Kazakhstan excel in technology skills.

INSIGHTS IN ACTION: Access to high-quality, job-focused online education creates social and economic mobility for individuals around the world. This is especially the case for developing economies, where 91% of learners report career benefits from enrolling in a course on Coursera.[15] By investing in training programs that target specific skill gaps, leaders can build a more talented workforce.

> “You can study for a degree with a university on the other side of the world, wherever you are, at whatever stage of life you’re at: If you’re rearing kids, if you’re busy at work, if you have a disability, which would prevent you coming to campus on a traditional face-to-face degree… it’s independent of time and space and location. And that’s the inherent flexibility of this mode of education.
>
> **Sam Brenton**
> Director of Online Education, University of London
>
> UNIVERSITY OF LONDON

Partner perspectives

Search interest for ‘how to become a data analyst’ reached a global all-time high in 2023. People are eager to enter this growing field. Data analytics skills are in-demand across industries as businesses of all types around the world recognize that strong analytics improve business performance. These skills can lead to well-paying jobs even at entry-level positions, and they offer significant upward career opportunities.

Lisa Gevelber
Founder, Grow with Google

Learn more about Google Data Analytics Certificates

Cloud is accelerating opportunities for organizations of all sizes, around the globe, to completely transform their business. Fueling this cloud transformation will be individuals with the right in-demand digital skills. We are delighted to continue partnering with institutions, like Coursera, that help individuals build pathways towards cloud careers with skills-based trainings and certifications.

Maureen Lonergan
VP, AWS Training and Certification

Learn more about AWS Cloud Solutions Architect Professional Certificate

Demand for cybersecurity professionals is at an all-time high, with 3.5 million job openings expected globally by 2025. As a recognized leader in security, Cisco is committed to helping close the readiness gap. The Cisco Cybersecurity Operations Specialization available on Coursera enables individuals to gain the skills to identify threats, secure the network, and start a career in cybersecurity.

Par Merat
VP, Cisco Learning and Certifications

Learn more about Cisco’s Cybersecurity Operations Specialization

How to Read this Report

Understanding skill proficiencies

Coursera has a registered learner base of 124M learners and we draw from this base of learners to report skills insights for 100 countries in this report.

While the skill proficiencies of learners in countries correlate with positive economic indicators, they are not necessarily representative of a population within a country, given that this data can only surface trends among those who are registered learners on Coursera.

An individual's ability to access and use Coursera is influenced by many factors, including internet infrastructure, educational background or past training, and local culture or norms. We also use learner profile data such as gender, age, and location.

The results may also be influenced by local economic or social conditions. For example, economic downturns sometimes drive learners to Coursera. Our industry partnerships also sometimes quickly bring thousands of new learners onto the platform. In general, our goal is to objectively represent what is happening across the Coursera ecosystem.

Sometimes our results capture what is happening across an entire economy. Other times, the demographics and behavior of Coursera learners means that some results should not be extrapolated or interpreted as representing broad populations. Nevertheless, we believe sharing these insights presents an opportunity to generate new, more granular insights and complement other, more traditional data sources on education.

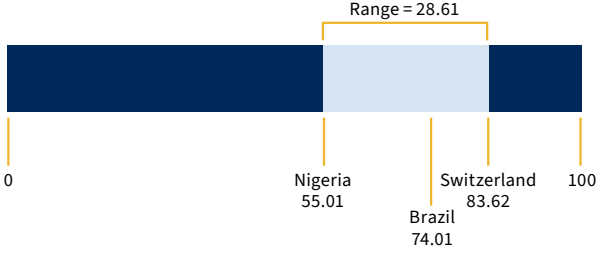
Reading country rankings

To benchmark skill proficiency at the country level, we first measure the skill proficiency of each learner in each skill. Then, we aggregate those proficiencies to compute insights—for example, a country's proficiency in a particular skill is an average of all learners' skill scores in that country.

We then compare these proficiency levels against one another by using percentile rankings. A country that is at 100% ranks at the top of the 100 countries featured in this report, while a country at 0% is at the bottom.

The percentile rankings are divided into four proficiency categories:

- **Cutting-edge:** 76th percentile or above
- **Competitive:** 51st-75th percentile
- **Limited:** 26th-50th percentile
- **Lagging:** 25th percentile or below



Though we present these percentiles in relative rankings of 1 to 100, the actual raw difference in overall proficiency scores among countries is much closer than it may seem, with a range of 28.61. The above image illustrates the range of the raw proficiency score (not to be confused with the proficiency percentile).

Understanding the relationships among skills

We assemble a vast skills taxonomy of over 4,000 skills in the subject areas of business, technology, and data science through a combination of open-source taxonomies like Wikipedia and crowdsourcing from Coursera educators and learners.

Guided by open-source data combined with knowledge from industry experts, we assemble a structured taxonomy that connects Coursera domains to the set of skills within them, ranging from competencies down to very specific skills.

Level 1 Skills: Also known as domains, Level 1 Skills constitute the largest levels of granularity for skills. In this report, we focus on three domains: business, technology, and data science. Skills found in these domains are among our most popular and reflect the skills that employers need.

- *Business:* These include skills that involve the management and operation of organizations—like marketing and supply chain systems—and also human skills like leadership & management.
- *Technology:* These are skills that involve computer science, information technology, and applied mathematics. Some examples are software engineering and Java.
- *Data Science:* These are skills that involve the creation and use of information. Some examples are SQL, big data, and machine learning.

Level 2 Skills: Also known as competencies in Coursera's Skills Taxonomy, Level 2 Skills are the next layer of granularity following domains. For the Global Skills Report, we focus on measuring learner *skill proficiency* at the competency level.

Level 3 Skills: These are the more granular skills of Coursera's Skills Taxonomy that are covered in this report and these ladder directly up to Level 2 Skills. When we discuss over-indexing skills in the Global Skills Report, we are looking exclusively at Level 3 Skills. Because these skills form the building blocks found in many Level 2 Skills, they can be found in multiple skill domains. For instance, linear algebra is a foundational skill for Level 2 skills in both the technology and data science domains.

To illustrate the mapping among domains, competencies, and skills, here is a snapshot of a subsection of Coursera's Skills Taxonomy:

Level 1

Level 2

Level 3

Level 2

Level 3 ...

This sample of the Coursera Skill Taxonomy includes all Level 1 and Level 2 covered in the Global Skills Report but only a small selection of the Level 3 skills covered in the report.

Business

Accounting
- Auditing

Communication
- People skills

Enterpreneurship
- Adaptability

Finance
- Blockchain

Human Resources
- Benefits

Leadership & Management
- People management

Marketing
- Digital marketing

Sales
- Cross-selling

Strategy & Operations
- Operations management

Technology

Cloud Computing
- Software as a Service

Computer Networking
- Cloud computing

Computer Programming
- JavaScript

Databases
- Relational database

Mobile Development
- Android development

Operating Systems
- Mobile app development

Security Engineering
- Cybersecurity

Software Engineering
- Software architecture

Theoretical Computer Science
- Algorithms

Web Development
- Angular

Data Science

Data Analysis
- Exploratory data analysis

Data Management
- Cloud APIs

Data Vizualization
- Tableau

Machine Learning
- Multi-task learning

Mathematics
- Calculus

Probability & Statistics
- Regression

Statistical Programming
- Python

Regional Skill Trends

Bharathan Mudailar, India
Coursera Learner

REGIONAL SKILL TRENDS

ASIA PACIFIC

37.8M
Coursera Learners

30
Median Age

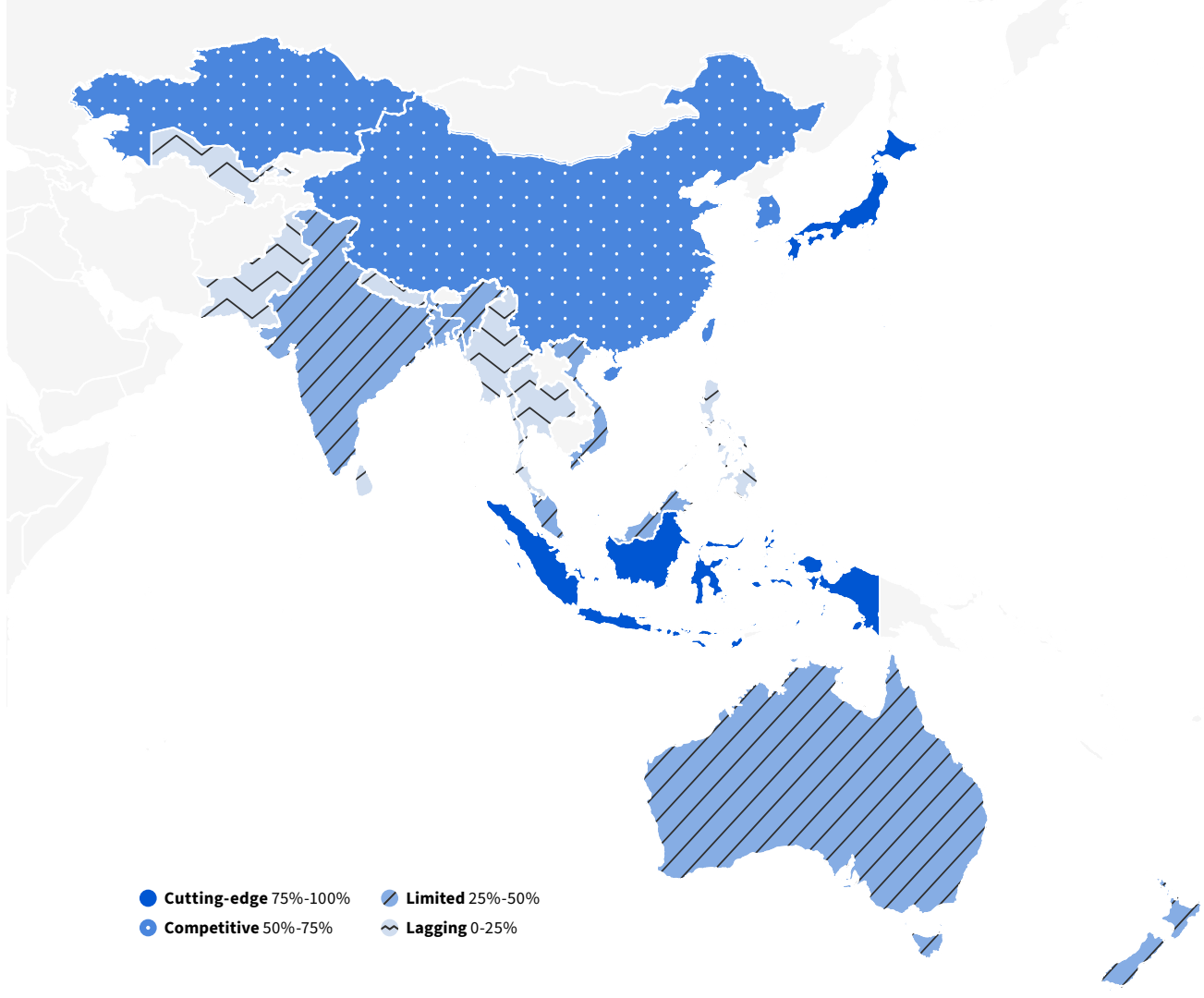
The Asia Pacific (APAC) economy is forecasted to grow 4.8% this year and maintain at this rate in 2024.[16] Learners in the region are on average more proficient in data science and technology skills than business skills. APAC has two of the top ten ranking countries for overall skill proficiency—Japan and Indonesia—and the second highest regional average year-over-year growth rate in Professional Certificates.

41%
Women Learners

53%
Learning on Mobile

69%
Internet Access

↑69%
Professional Certificate Enrollment Growth



Asia Pacific

STRENGTHS AND OPPORTUNITIES: Seven APAC countries attain an overall cutting-edge skill proficiency score—including Japan, Indonesia, Singapore, Hong Kong, and South Korea. However, there is considerable variation across countries in the region when it comes to specific skill domains. For business skills like finance and entrepreneurship, Hong Kong (85%) and Singapore (79%) lead the region. For technology skills, Indonesia (98%) leads, followed by Kazakhstan (96%) and Japan (92%) while Indonesia (100%), Japan (98%), and Hong Kong (94%) lead the region in data science skills.

OVER-INDEXING SKILLS: APAC learners are more likely than learners in other regions to invest in AI-related skills like applied machine learning (1.15x), machine learning algorithms (1.14x), deep learning (1.14x) and artificial neural networks (1.14x). Only one of the top five over-indexing business skills for the region is related to leadership, people analysis (1.22x), while other over-indexing skills relate to finance, such as investment management (1.28x) and fintech (1.2x).

Regional Skill Proficiencies

GLOBAL RANK	COUNTRY NAME	BUSINESS | 41%*	TECHNOLOGY | 49%*	DATA SCIENCE | 52%*
5	Japan	27%	92%	98%
6	Indonesia	1%	98%	100%
16	Singapore	79%	77%	79%
20	Hong Kong	85%	54%	94%
26	South Korea	63%	70%	88%
31	Kazakhstan	14%	96%	58%
34	China	75%	24%	93%
37	Cyprus	69%	63%	61%
40	Taiwan	57%	48%	78%
55	Vietnam	37%	62%	47%
56	New Zealand	51%	42%	52%
59	Australia	45%	36%	55%
60	India	52%	52%	34%
67	Malaysia	43%	46%	33%
73	Bangladesh	68%	15%	29%
79	Sri Lanka	18%	51%	28%
80	Nepal	12%	34%	49%
83	Thailand	34%	25%	22%
84	Myanmar	39%	17%	19%
89	Uzbekistan	5%	53%	17%
92	Pakistan	22%	10%	8%
99	The Philippines	16%	5%	1%

*Average regional scores

COUNTRY SPOTLIGHT

Australia

1.3M Coursera Learners

36 Median Age

59 Global Rank

Data science and business skills are key areas to invest in. There are also opportunities to capitalize on over-indexing business skills and further prepare learners for digital roles by investing in Professional Certificates, which 95% of Australian employers agree strengthens a candidate's job application.[17]

50% Women Learners

33% Learning on Mobile

90% Internet Access

↑12% Professional Certificate Enrollment Growth

STRENGTHS AND OPPORTUNITIES: Learners in Australia score lower in business skills overall, with human resources (81%) being a key strength and strategy & operations (28%) being a key area for improvement. Learners' technology scores rank #10 in APAC, ahead of New Zealand, with the highest scores in web development (74%) and databases (71%), and lowest in cloud computing (27%) and mobile development (30%). In data science, skill scores largely fall into the competitive ranking, with particular strengths in data analysis (72%) and data management (71%).

OVER-INDEXING SKILLS: In the business domain, Australian learners are more likely than learners in other countries to invest in resilience (2.18x), adaptability (2.09x) and critical thinking (1.31x). Australian learners over-index in technology skills related to math, like calculus (1.4x), and data science skills like bioinformatics (1.45x) and geovisualization (1.28x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 56		TECHNOLOGY | Rank 65		DATA SCIENCE | Rank 46	
Accounting	59%	Cloud Computing	27%	Data Analysis	72%
Communication	3%	Computer Networking	35%	Data Management	71%
Entrepreneurship	58%	Computer Programming	44%	Data Visualization	72%
Finance	70%	Databases	71%	Machine Learning	60%
Human Resources	81%	Mobile Development	30%	Mathematics	58%
Leadership & Management	44%	Operating Systems	44%	Probability & Statistics	44%
Marketing	58%	Security Engineering	54%	Statistical Programming	46%
Sales	72%	Software Engineering	34%		
Strategy & Operations	28%	Theoretical Computer Science	61%		
		Web Development	74%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Resilience (2.18x)	Calculus (1.4x)	Bioinformatics (1.45x)
Adaptability (2.09x)	Mathematical Theory & Analysis (1.22x)	Geovisualization (1.28x)
Critical Thinking (1.31x)	Linear Algebra (1.13x)	Calculus (1.26x)
Spreadsheet Software (1.17x)	Distributed Computing Architecture (1.12x)	Epidemiology (1.24x)
Problem Solving (1.13x)	Graph Theory (1.06x)	Bayesian Statistics (1.19x)

COUNTRY SPOTLIGHT

India

19M
Coursera Learners

29
Median Age

60
Global Rank

India has the second-highest number of Coursera learners worldwide, second only to the U.S. However, just as in the U.S., this has resulted in very disparate scores across the country. Professional Certificates are especially in demand with 96% of students agreeing that they will help them secure the job that they desire.[18]

38%
Women Learners

59%
Learning on Mobile

43%
Internet Access

↑38%
Professional Certificate Enrollment Growth

See the India State-by-State Skill Trends on p. 25 for a more in-depth analysis

STRENGTHS AND OPPORTUNITIES: Learner performance levels vary significantly between states, resulting in lower overall scores for the nation. Learners demonstrate high business skill proficiency, earning cutting-edge scores in skills like communication (76%) and human resources (88%). Learners also score highly in technology, earning cutting-edge proficiency scores in mobile development (84%), and they are competitive in theoretical computer science (68%), web development (54%), software engineering (51%) and cloud computing (73%). Data science represents the greatest opportunity for improvement.

OVER-INDEXING SKILLS: Indian learners are more likely to be developing AI-related skills than learners in most countries, over-indexing on artificial neural networks (1.15x), applied machine learning (1.2x), and machine learning algorithms (1.2x). In the field of business, learners particularly uniquely favor courses in data visualization software (1.59x), blockchain (1.58x), and supply chain systems (1.55x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 49		TECHNOLOGY | Rank 49		DATA SCIENCE | Rank 67	
Accounting	15%	Cloud Computing	73%	Data Analysis	37%
Communication	76%	Computer Networking	40%	Data Management	38%
Entrepreneurship	40%	Computer Programming	30%	Data Visualization	46%
Finance	64%	Databases	18%	Machine Learning	42%
Human Resources	88%	Mobile Development	84%	Mathematics	51%
Leadership & Management	28%	Operating Systems	15%	Probability & Statistics	19%
Marketing	47%	Security Engineering	31%	Statistical Programming	33%
Sales	46%	Software Engineering	51%		
Strategy & Operations	26%	Theoretical Computer Science	68%		
		Web Development	54%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Data Visualization Software (1.59x)	Software Architecture (1.31x)	Applied Machine Learning (1.2x)
Blockchain (1.58x)	C Programming Language Family (1.27x)	Machine Learning Algorithms (1.2x)
Supply Chain Systems (1.55x)	Distributed Computing Architecture (1.16x)	Regression (1.17x)
Investment Management (1.48x)	Algorithms (1.14x)	Deep Learning (1.16x)
People Analysis (1.28x)	Data Structures (1.13x)	Artificial Neural Networks (1.15x)

COUNTRY SPOTLIGHT

Malaysia

600K
Coursera Learners

32
Median Age

67
Global Rank

Malaysians are enrolling in Professional Certificates at a soaring YOY growth rate—the fifth highest in the world. However, there is an opportunity to improve skill proficiencies across domains, especially in data science.

46%
Women Learners

39%
Learning on Mobile

97%
Internet Access

↑113%
Professional Certificate Enrollment Growth

STRENGTHS AND OPPORTUNITIES: Malaysian learners achieve competitive scores for business skills like marketing (63%), communication (59%), and entrepreneurship (55%). Data science is the nation's strongest domain with learners achieving cutting-edge ratings in computer networking (76%), operating systems (82%), and databases (86%), although there is an opportunity to further improve software engineering (24%), in particular. While the country ranks #68 overall in data science, learners achieve competitive scores in data management (63%) and data analysis (60%).

OVER-INDEXING SKILLS: Learners in Malaysia are more likely to invest in business skills like fintech (1.24x), advertising (1.18x), and investment management (1.17x), in comparison to learners in other countries. In technology, learners are investing in user experience (1.17x), data structures (1.11x), and computer graphic techniques (1.08x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 58		TECHNOLOGY | Rank 55		DATA SCIENCE | Rank 68	
Accounting	27%	Cloud Computing	31%	Data Analysis	60%
Communication	59%	Computer Networking	76%	Data Management	63%
Entrepreneurship	55%	Computer Programming	34%	Data Visualization	29%
Finance	45%	Databases	86%	Machine Learning	41%
Human Resources	43%	Mobile Development	35%	Mathematics	26%
Leadership & Management	27%	Operating Systems	82%	Probability & Statistics	8%
Marketing	63%	Security Engineering	57%	Statistical Programming	39%
Sales	38%	Software Engineering	24%		
Strategy & Operations	50%	Theoretical Computer Science	62%		
		Web Development	32%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Fintech (1.24x)	User Experience (1.17x)	Epidemiology (1.26x)
Advertising (1.18x)	Data Structures (1.11x)	SQL (1.19x)
Investment Management (1.17x)	Software Testing (1.09x)	Data Visualization Software (1.19x)
Critical Thinking (1.14x)	Computer Graphic Techniques (1.08x)	Big Data (1.12x)
Spreadsheet Software (1.14x)	Computer Programming Tools (1.06x)	Data Analysis Software (1.12x)

COUNTRY SPOTLIGHT

The Philippines

1.8M Coursera Learners

31 Median Age

99 Global Rank

The Philippines leads the world in YOY Professional Certificate enrollment growth rate and is notable as an APAC country that has achieved fifty-fifty gender parity in access to Coursera. However, there is an opportunity for regional leaders in the country to further develop business skill proficiency by harnessing learner interest in skills like social media and advertising.

51% Women Learners

50% Learning on Mobile

50% Internet Access

↑253% Professional Certificate Enrollment Growth

STRENGTHS AND OPPORTUNITIES: While there are opportunities to further invest in business, technology, and data science skills, learners are achieving high proficiency scores in some areas. Learners in the Philippines demonstrate a cutting-edge proficiency in the business skill accounting (87%), as well as in the technology skill security engineering (91%). Data science represents an opportunity for investment across the board.

OVER-INDEXING SKILLS: In comparison to learners in other countries, Filipino learners are more likely to invest in marketing-related business skills like social media (1.85x), advertising (1.49x), and brand management (1.35x). Learners are also more likely to be learning technology skills like graphic design (2.74x), computer graphic techniques (1.53x), and user experience (1.65x). Notably, Filipino learners are also demonstrating a disproportionate interest in the AI-related skill big data (1.35x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 85		TECHNOLOGY | Rank 96		DATA SCIENCE | Rank 100	
Accounting	87%	Cloud Computing	10%	Data Analysis	7%
Communication	17%	Computer Networking	32%	Data Management	2%
Entrepreneurship	21%	Computer Programming	7%	Data Visualization	1%
Finance	21%	Databases	14%	Machine Learning	8%
Human Resources	41%	Mobile Development	5%	Mathematics	7%
Leadership & Management	1%	Operating Systems	42%	Probability & Statistics	1%
Marketing	9%	Security Engineering	91%	Statistical Programming	1%
Sales	35%	Software Engineering	14%		
Strategy & Operations	5%	Theoretical Computer Science	13%		
		Web Development	5%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Social Media (1.85x)	Graphic Design (2.74x)	Epidemiology (2.04x)
Advertising (1.49x)	User Experience (1.65x)	SQL (1.77x)
General Accounting (1.38x)	Computer Graphic Techniques (1.53x)	Big Data (1.35x)
Brand Management (1.35x)	Software Testing (1.51x)	General Statistics (1.31x)
Influencing (1.34x)	Network Architecture (1.37x)	Data Analysis Software (1.27x)

COUNTRY SPOTLIGHT

Singapore

900K
Coursera Learners

33
Median Age

16
Global Rank

Globally, Singapore has the highest percentage of working-age learners on Coursera. The nation earns competitive scores for business, technology, and data science skills, making for one of the most well-rounded countries in the world. Leaders can harness learner interest in over-indexing AI-related skills and further prepare learners for digital roles by investing in Professional Certificates.

45%
Women Learners

37%
Learning on Mobile

92%
Internet Access

↑16%
Professional Certificate Enrollment Growth

STRENGTHS AND OPPORTUNITIES: Singaporean learners achieve cutting-edge scores in business skills like finance (94%), human resources (87%), sales (90%), marketing (93%), and entrepreneurship (88%). Singaporean learners are competitive across the board in technology skills but deliver cutting-edge results in theoretical computer science (88%), computer programming (81%), web development (99%), and databases (87%). Similarly in data science, learners achieve cutting-edge scores in data visualization (91%), data analysis (85%), mathematics (91%), and data management (84%), while the remainder achieve competitive scores.

OVER-INDEXING SKILLS: In comparison to learners in other countries, learners in Singapore are more likely to invest in business skills like fintech (2.05x), blockchain (1.8x), and investment management (1.38x) and AI-related data science skills like computer vision (1.07x), applied machine learning (1.07x), and deep learning (1.05x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 22		TECHNOLOGY | Rank 24		DATA SCIENCE | Rank 22	
Accounting	63%	Cloud Computing	9%	Data Analysis	85%
Communication	4%	Computer Networking	74%	Data Management	84%
Entrepreneurship	88%	Computer Programming	81%	Data Visualization	91%
Finance	94%	Databases	87%	Machine Learning	69%
Human Resources	87%	Mobile Development	63%	Mathematics	91%
Leadership & Management	73%	Operating Systems	73%	Probability & Statistics	66%
Marketing	93%	Security Engineering	62%	Statistical Programming	62%
Sales	90%	Software Engineering	55%		
Strategy & Operations	65%	Theoretical Computer Science	88%		
		Web Development	99%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Fintech (2.05x)	Distributed Computing Architecture (1.29x)	Bayesian Statistics (1.23x)
Blockchain (1.8x)	Graph Theory (1.24x)	Experiment (1.2x)
Investment Management (1.38x)	Linear Algebra (1.2x)	Probability Distribution (1.13x)
Innovation (1.31x)	Calculus (1.18x)	Graph Theory (1.11x)
Risk Management (1.26x)	Other Programming Languages (1.08x)	Artificial Neural Networks (1.08x)

COUNTRY SPOTLIGHT

Thailand

700K
Coursera Learners

31
Median Age

83
Global Rank

Thailand is seeing surging demand for Professional Certificates among learners with the seventh-highest YOY growth rate in the world and is notable as an APAC country that has achieved fifty-fifty gender parity in access to Coursera. There is an opportunity for regional leaders in the country to further invest in data science and technology skills and to harness both learner interest in over-indexing skills and Professional Certificates aligned to these domains to do so.

51%
Women Learners

45%
Learning on Mobile

85%
Internet Access

↑124%
Professional Certificate Enrollment Growth

STRENGTHS AND OPPORTUNITIES: Thai learners demonstrate the strongest proficiency in business skills, achieving a cutting-edge score in marketing (97%), but this domain could benefit from further investment in skills like leadership & management (8%). In technology skills, Thai learners score as competitive in databases (52%), computer programming (58%), and computer networking (59%). Data science skills constitute the greatest area for investment, with competitive scores in machine learning (58%), and lower scores in mathematics (15%), data visualization (15%), and probability & statistics (7%).

OVER-INDEXING SKILLS: In comparison to other countries, Thai learners are more likely to invest in business skills like writing (1.37x), leadership development (1.48x), people development (1.44x) and emotional intelligence (1.3x). Learners are also prioritizing technology skills that focus on mathematics, including distributed computing architecture (1.23x), mathematical theory and analysis (1.2x), and calculus (1.2x).

Global Rankings and Skill Proficiency Levels

BUSINESS | Rank 67		TECHNOLOGY | Rank 76		DATA SCIENCE | Rank 79	
Accounting	18%	Cloud Computing	36%	Data Analysis	47%
Communication	16%	Computer Networking	59%	Data Management	31%
Entrepreneurship	50%	Computer Programming	58%	Data Visualization	15%
Finance	40%	Databases	52%	Machine Learning	58%
Human Resources	36%	Mobile Development	N/A	Mathematics	15%
Leadership & Management	8%	Operating Systems	9%	Probability & Statistics	7%
Marketing	97%	Security Engineering	16%	Statistical Programming	34%
Sales	71%	Software Engineering	30%		
Strategy & Operations	34%	Theoretical Computer Science	26%		
		Web Development	31%		

Top Over-Indexing Skills

BUSINESS	TECHNOLOGY	DATA SCIENCE
Leadership Development (1.48x)	Distributed Computing Architecture (1.23x)	Epidemiology (1.26x)
People Development (1.44x)	Mathematical Theory & Analysis (1.2x)	Experiment (1.21x)
Writing (1.37x)	Calculus (1.2x)	Bioinformatics (1.19x)
Emotional Intelligence (1.3x)	Linear Algebra (1.18x)	Bayesian Statistics (1.17x)
Human Learning (1.26x)	User Experience (1.15x)	Computer Vision (1.13x)

Appendix

Wafa Babsail, Indonesia
Coursera Learner

Glossary

Artificial Intelligence (AI) Skills: While many skills are relevant to working with artificial intelligence, in this report we focus on the following skills when discussing AI:

Advanced Skills

- *Level 2 Skills:* Data management, machine learning.
- *Level 3 Skills:* Applied machine learning, artificial neural networks, bayesian network, big data, computer vision, deep learning, dimensionality reduction, feature engineering, machine learning algorithms, machine learning software, markov model, TensorFlow, natural language processing, reinforcement learning, and statistical machine learning.

Foundational Skills

- *Level 2 Skills:* Computer programming, data analysis, mathematics, and theoretical computer science.
- *Level 3 Skills:* Applied mathematics, data modeling.

Digital and Human Skills: No matter their domain, most skills can fall into two broad categories, digital and human, and we sometimes refer to these categories in this report.

- *Digital skills* refer to a range of abilities that allow one to understand, use, and create value with and from technology. They include everything from typing to posting on social media to developing software to cybersecurity. Digital skills exist on an ever-evolving spectrum.
- *Human skills* constitute our ability to relate to one another. They include a range of cognitive, social, and emotional skills, such as creativity, critical thinking, information interpretation, decision-making, leadership, and communication.
- *Note:* These two categories are complementary. People use human skills to effectively and ethically make use of digital skills. Likewise, digital skills enhance human skills.

Leadership Skills: While many skills are related to cultivating one's ability to lead, we will focus on the following skills when discussing leadership in this report:

- *Level 2 Skills:* Leadership & management and strategy & operations.
- *Level 3 Skills:* Adaptability, change management, collaboration, conflict management, critical thinking, culture, decision making, emotional intelligence, human learning, leadership development, organizational development, people development, planning, problem solving, professional development, project management, resilience, strategy, and training.

Learner: Anyone who is registered for content on Coursera. A person can be enrolled in multiple learning programs, but we count them as a learner once. The skills benchmarking data in this report is based on learner data. We sometimes refer to learners as "talent" in this report to emphasize the connection between skills development on Coursera and career outcomes.

Over-indexing: This measures Level 3 skills that are more popular with certain groups than on Coursera as a whole. For example, if a specific skill is over-indexed for learners with college degrees by 1.10x, that means 1.10x more learners in that group are pursuing that specific skill than learners as a whole. Over-indexing is not a measure of proficiency.

Professional Certificate: Coursera offers Professional Certificates, a type of micro-credential, from leading companies such as IBM, Intuit, Google, Meta, and Salesforce that teach the specific skills needed for in-demand digital jobs such as data analyst, software developer, digital marketer, and more. They also involve hands-on projects that simulate tasks done on the job. Each Professional Certificate takes an average of four to six months to complete.

Professional Certificate Enrollment Growth: This metric examines the year-over-year (YOY) growth in total enrollments for a country or region. Growth figures for regions take only into consideration enrollment figures of the 100 countries included in this report.

Skills: The transference of knowledge into value and the ability to perform specific tasks. To figure out what skills each Coursera content offering teaches, we use Coursera's Skills Graph, which draws information from open-source taxonomies like Wikipedia and insights from Coursera educators and learners. A single course often covers several different skills.

STATE-BY-STATE SKILL TRENDS

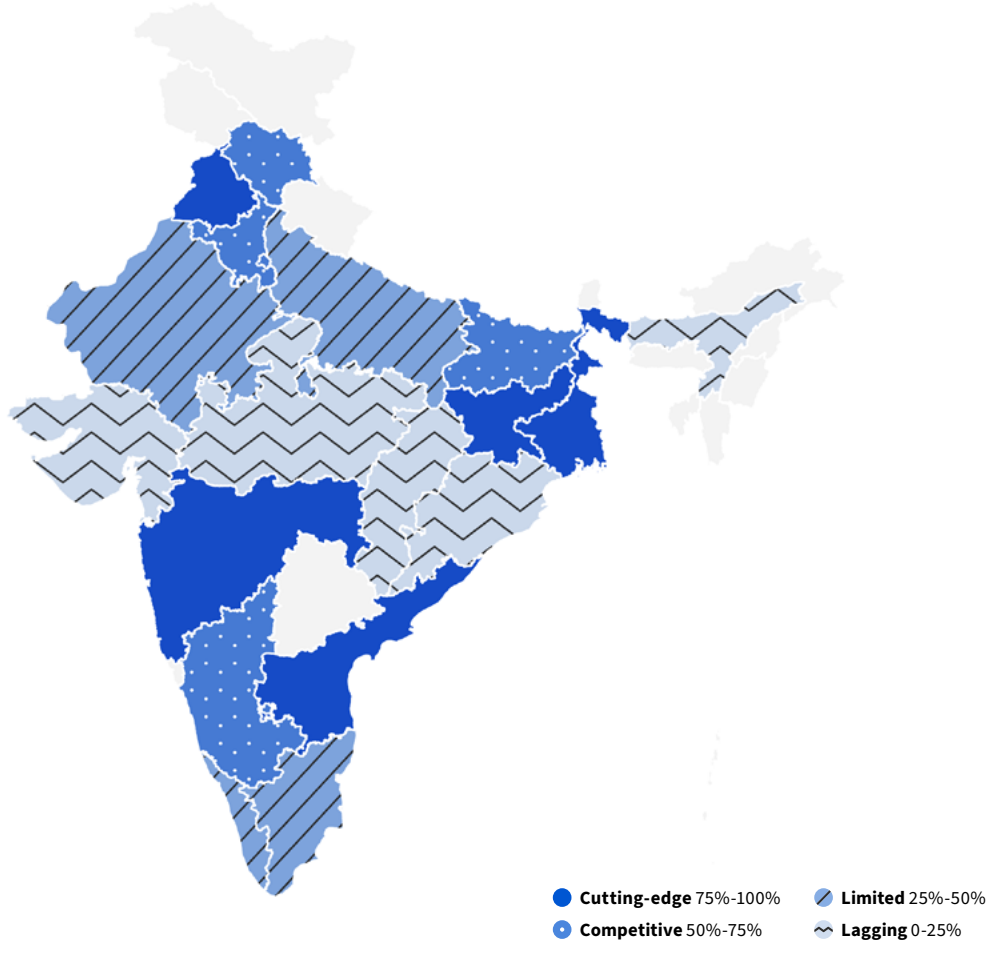
INDIA

19M
Coursera Learners

29
Median Age

The proliferation of internet access and, thus, the availability of online learning has opened up access to higher-level education in India, and this means skilled workers can now be found across the country, not just in established technology hubs.

No single region in India has a clear advantage when it comes to overall skill proficiencies. Learners in the West generally achieved stronger proficiency scores than those in the North, East, and South, though there are areas of skills strengths and opportunities for development throughout the country. Technology skills are spread evenly across the country, while learners in West Bengal and Chandigarh achieve higher proficiency scores in data science. Learners in the Union Territory of Puducherry and the State of Punjab have higher proficiency scores for business skills than learners in other states.



Overall Skill Proficiency Ranking

RANK	STATE NAME
1	West Bengal
2	Chandigarh
3	State of Punjab
4	Andhra Pradesh
5	Maharashtra
6	State of Jharkhand
7	Bihar
8	Haryana
9	Karnataka
10	State of Himachal Pradesh
11	National Capital Territory of Delhi

RANK	STATE NAME
12	Tamil Nadu
13	Rajasthan
14	Uttar Pradesh
15	Kerala
16	Union Territory of Puducherry
17	Odisha
18	State of Assam
19	State of Chhattisgarh
20	Gujarat
21	Madhya Pradesh

> We should ensure that whatever is being taught in colleges today is always industry worthy and industry relevant.

Tmt J.Innocent Divyam
Managing Director at Tamil Nadu Skill Development Corporation

Strengths and Opportunities

Business

Leading scores in five of the eight business skills covered in this report are split between two states: Union Territory of Puducherry with entrepreneurship (100%), strategy & operations (100%), and business marketing (100%), and the State of Punjab with leadership & management (100%) and accounting (100%). The highest scores in other business skills are spread across Andhra Pradesh with finance (100%), Chandigarh with sales (100%), and Bihar with human resources (100%).

West Bengal ranks #1 in the country for business skills, with learners achieving cutting-edge scores in all skills except accounting (50%) and strategy and operations (62%).

Union Territory of Puducherry ranks #2 in the country for business skills, with five categories scoring a cutting-edge ranking, including communication (90%) and leadership & management (76%).

Technology

Technology skills are spread evenly across the country: State of Assam with databases (100%), Kerala with security engineering (100%), Union Territory of Puducherry with computer networking (100%), and Rajasthan with web development (100%), with no one region having a clear advantage.

Overall, however, State of Punjab ranks #1 in India for technology skills, with top scores in operating systems (100%) and theoretical computer science (100%) and cutting-edge scores in security engineering (95%) and computer programming (90%).

West Bengal ranks #2 in the country for technology skills, with learners earning cutting-edge scores in computer programming (100%), theoretical computer science (90%), and operating systems (89%).

Union Territory of Puducherry ranks #21 in India for technology, but at the same time, ranks #1 in the country for computer networking (100%) skills and achieves cutting-edge scores in security engineering (81%) and computer programming (81%).

Data Science

West Bengal ranks #1 overall in India for data science skills, with all skills rating as cutting-edge. Chandigarh ranks #2 in the region for data science, with all skills rating as cutting-edge, except for data visualization (10%).

Punjab ranks #3 in the country with cutting-edge scores in all skills, except data analysis (33%) and data visualization (29%). The State of Jharkhand ranks #4 in the region with four cutting-edge scores.

Learners in Chandigarh achieve some of the highest data science scores, with leading scores in data management (100%), machine learning (100%), and mathematics (100%), while learners in West Bengal lead in data analysis (100%) and probability & statistics (100%). Learners in Andhra Pradesh lead in data visualization (100%), and learners in the Union Territory of Puducherry lead in statistical programming (100%).

INDIA | Business

BUSINESS RANK	STATE NAME	ENTREPRE-NEURSHIP	FINANCE	SALES	HUMAN RESOURCES	LEADERSHIP & MANAGEMENT	ACCOUNTING	STRATEGY & OPERATIONS	BUSINESS MARKETING	BUSINESS COMMUNICATION
1	West Bengal	95%	90%	80%	95%	95%	50%	62%	95%	100%
2	Union Territory of Puducherry	100%	5%		5%	76%		100%	100%	90%
3	Maharashtra	76%	76%	85%	90%	86%	44%	81%	81%	95%
4	Chandigarh	86%	67%	100%	57%	90%	89%	90%	90%	57%
5	National Capital Territory of Delhi	67%	81%	75%	62%	71%	72%	76%	71%	71%
6	Haryana	90%	48%	90%	29%	81%	78%	95%	67%	62%
7	State of Punjab	71%	33%	40%	43%	100%	100%	67%	52%	43%
8	State of Himachal Pradesh	29%	95%	55%	71%	62%	33%	48%	43%	38%
9	Bihar	62%	29%	60%	100%	67%	39%	52%	24%	81%
10	State of Jharkhand	48%	57%	50%	86%	48%		19%	76%	67%
11	Tamil Nadu	81%	14%	95%	14%	52%	67%	86%	86%	52%
12	Karnataka	52%	38%	70%	33%	29%	22%	71%	62%	86%
13	Andhra Pradesh	5%	100%	5%	81%	5%	6%	10%	10%	76%
14	Uttar Pradesh	24%	52%	45%	38%	24%	56%	33%	57%	33%
15	Odisha	33%	24%	65%	67%	43%	28%	43%	29%	48%
16	State of Chhattisgarh	57%	10%	35%	76%	57%		57%	33%	5%
17	Kerala	19%	71%	30%	19%	33%	94%	38%	19%	19%
18	Madhya Pradesh	14%	86%	10%	52%	19%	61%	24%	14%	24%
19	State of Assam	43%	19%	20%	24%	14%	83%	14%	48%	29%
20	Rajasthan	38%	62%	25%	48%	38%	11%	5%	38%	10%
21	Gujarat	10%	43%	15%	10%	10%	17%	29%	5%	14%

INDIA | Technology

TECHNOLOGY RANK	STATE NAME	DATABASES	SECURITY ENGINEERING	COMPUTER NETWORKING	COMPUTER PROGRAMMING	WEB DEVELOPMENT	THEORETICAL COMPUTER SCIENCE	CLOUD COMPUTING	SOFTWARE ENGINEERING	OPERATING SYSTEMS	MOBILE DEVELOPMENT
1	State of Punjab	29%	95%	71%	90%	33%	100%	14%	19%	100%	53%
2	West Bengal	52%	76%	76%	100%	67%	90%	81%	71%	89%	13%
3	Andhra Pradesh	48%	48%	90%	57%	76%	62%	67%	90%	56%	100%
4	Chandigarh	43%	90%	57%	86%	57%	95%	10%	24%	94%	80%
5	Maharashtra	95%	86%	86%	29%	81%	19%	90%	95%	78%	67%
6	Rajasthan	10%	10%	19%	33%	100%	43%	100%	57%	28%	20%
7	Tamil Nadu	33%	62%	95%	14%	86%	14%	86%	86%	22%	87%
8	Kerala	67%	100%	67%	5%	62%	10%	33%	14%	61%	93%
9	Bihar	90%	33%	43%	76%	71%	81%	76%	67%	50%	47%
10	Karnataka	62%	52%	81%	43%	95%	38%	57%	100%	39%	27%
11	Haryana	76%	43%	52%	48%	29%	67%	43%	33%	72%	73%
12	Uttar Pradesh	57%	38%	29%	62%	43%	71%	71%	62%	44%	60%
13	State of Jharkhand	71%	5%	14%	95%	48%	76%	52%	76%		
14	Gujarat	38%	67%	62%	10%	14%	33%	95%	29%	83%	40%
15	National Capital Territory of Delhi	81%	57%	48%	38%	38%	57%	48%	38%	67%	7%
16	Odisha	86%	14%	38%	24%	52%	52%	62%	81%	17%	
17	State of Himachal Pradesh	14%	19%	10%	71%	90%	86%	24%	5%		
18	State of Assam	100%	29%	5%	52%	24%	29%	19%	10%		
19	State of Chhattisgarh	24%	71%	24%	67%	10%	48%	29%	48%	6%	
20	Madhya Pradesh	19%	24%	33%	19%	19%	24%	38%	43%	33%	33%
21	Union Territory of Puducherry	5%	81%	100%	81%	5%	5%	5%	52%	11%	

INDIA | Data Science

DATA SCIENCE RANK	STATE NAME	DATA ANALYSIS	DATA MANAGEMENT	MACHINE LEARNING	DATA VISUALIZATION	MATHEMATICS	STATISTICAL PROGRAMMING	PROBABILITY & STATISTICS
1	West Bengal	100%	95%	90%	81%	95%	90%	100%
2	Chandigarh	76%	100%	100%	10%	100%	81%	90%
3	State of Punjab	33%	86%	95%	29%	81%	86%	95%
4	State of Jharkhand	95%	76%	85%	95%	43%	67%	71%
5	Andhra Pradesh	90%	38%	70%	100%	10%	95%	67%
6	State of Himachal Pradesh	48%	43%	75%	5%	90%	71%	86%
7	Bihar	81%	67%	60%	67%	62%	62%	43%
8	Karnataka	71%	62%	40%	90%	76%	76%	10%
9	State of Assam	29%	24%	80%	33%	71%	43%	76%
10	Haryana	38%	57%	45%	71%	86%	52%	57%
11	Uttar Pradesh	57%	52%	50%	38%	48%	48%	38%
12	National Capital Territory of Delhi	52%	48%	25%	43%	67%	57%	52%
13	Rajasthan	67%	33%	65%	52%	19%	19%	62%
14	Maharashtra	14%	71%	20%	62%	38%	24%	33%
15	State of Chhattisgarh	24%	81%	35%	57%	14%	10%	29%
16	Odisha	19%	90%	10%	48%	24%	29%	24%
17	Madhya Pradesh	62%	10%	55%	86%	29%	5%	19%
18	Tamil Nadu	43%	19%	30%	19%	57%	33%	14%
19	Union Territory of Puducherry	86%	5%		76%	5%	100%	5%
20	Gujarat	10%	14%	15%	24%	52%	14%	81%
21	Kerala	5%	29%	5%	14%	33%	38%	48%

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