DAYANANDA SAGAR UNIVERSITY

7 DECADES LEGACY
IN EDUCATION & HEALTHCARE

A+ GRADE ACCREDITED BY NAAC

Master Data, Lead the Future of the Next Tech Revolution !

M.Sc. in DATA SCIENCE

School of Computer Applications

Index

DSU & its Rich Legacy of Excellence & Innovation

Dayananda Sagar Institutions founded in the 60's by a visionary, Late Sri. R. Dayananda Sagar (Barrister-at-Law) committed to take knowledge to the people, transforms today's students into responsible citizens and professional leaders of tomorrow. Dayananda Sagar University created by an Act of the Karnataka State in 2014, built on this adorable legacy and inspired by its own milestones, meeting the needs of quality higher education in this part of the world.

Dayananda Sagar University (DSU) is one of the top buoyant centers of transformative education, technological breakthroughs, & multidisciplinary research across engineering, law, management and media. Being a young, proactive, and leading university, DSU is breaking new ground and introducing some of the most advanced and innovative technologies in pedagogy with the goal of fostering the enduring skills and dispositions that the students will need for this new world.

University Accreditation and Rankings

TIMES ENGINEERING
TIMES ALL INDIA ENGINEERING INSTITUTES RANKING SURVEY 2023
NUMBER ONE
- Top Emerging Engineering Institutes
- Emerging Engineering Institutes - Placement
- Emerging Engineering Institutes - Research Capability

IIRF -2025
EDUCATION IMPACT AWARD
Promising Private University for Academic Excellence & Learning

ICARE RATINGS KSURF
Teaching Excellence
Research Excellence

- Emerging engineering institute
- Emerging engineering Institute Placement 2022
- Emerging Engineering Institute Research Capabilities

DSU has Rank No. 1 By TIMES OF INDIA 2022

ET THE ECONOMIC TIMES 2023
Excellence in Academic Facilities & Learning Resources

IIRF -2024
NATIONAL RANK– 9
TOP PRIVATE UNIVERSITIES IN INDIA (OVERALL)
STATE RANK 3 SOUTH ZONE RANK 3

IIRF -2026
EDUCATION IMPACT AWARD
Excellence in Employability & Placement Performance

TIMES BUSINESS AWARDS
BEST EMERGING UNIVERSITY 2021

34th edition WORLD EDUCATION SUMMIT 2025 CHENNAI
OUTSTANDING UNIVERSITY WITH BEST PLACEMENTS

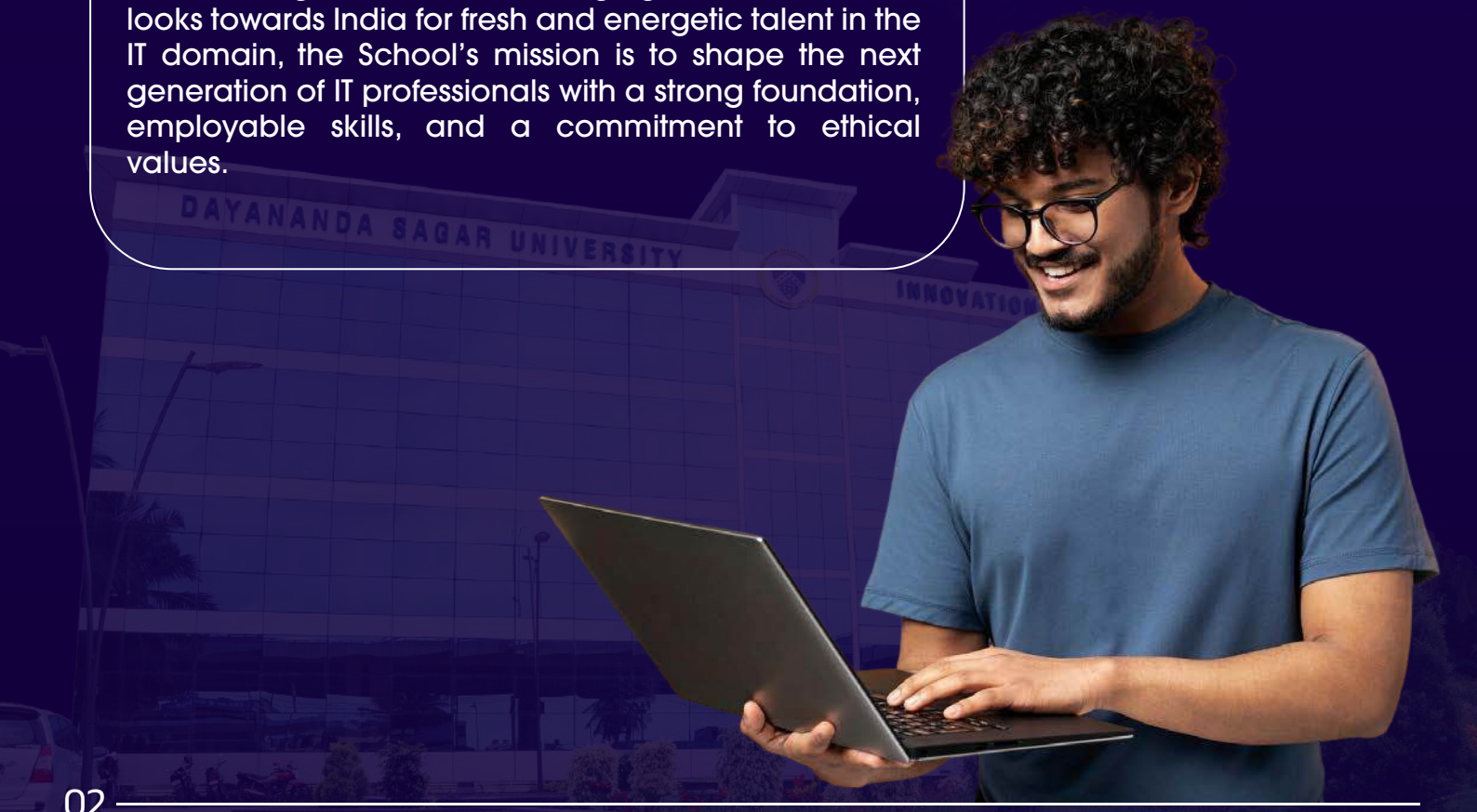
About the School

The School of Computer Applications offers a dynamic ecosystem for study, research, and professional growth for both faculty and students. It strives to groom its students into competent IT professionals, researchers, and entrepreneurs.

The School of Computer Applications was established with the 3-year BCA program, and further expanded with the 2-year MCA program, nurturing fresh talent in the field of Information Technology and equipping them with a plethora of skills to choose an area of interest at an early stage.

In line with emerging global trends and industry demand, the School has further diversified its offerings and has introduced Ph.D (Computer Science) program, B.Sc. (Data Science),B.Sc (Cybersecurity),M.Sc. (Data Science) and M.Sc (Cybersecurity) programs, thereby strengthening its academic and research ecosystem.

The Two-year M.Sc. Data Science program firmly believes that theoretical knowledge supported by ample in-depth practical exposure is essential to meet the challenges of this ever-changing field. As the world looks towards India for fresh and energetic talent in the IT domain, the School's mission is to shape the next generation of IT professionals with a strong foundation, employable skills, and a commitment to ethical values.



Highlights of the School of Computer Applications

Industry-Aligned Curriculum: Our courses are regularly updated to reflect industry trends, ensuring that students are prepared to meet current and future demands in the tech world.

Hands-On Learning: Through labs, projects, and internships, students gain practical experience that complements their academic knowledge.

Research and Innovation: The school actively encourages student and faculty involvement in research, fostering innovation and contributing to advancements in computer science and IT.

Global Perspectives: With a focus on sustainable technology, our programs are designed to equip students with a global outlook and the skills needed to make impactful contributions to society.

Ethics and Leadership: Beyond technical skills, we emphasize the importance of ethical practices and leadership, preparing students to navigate their careers with integrity and a sense of responsibility.

By focusing on quality education, skill development, and ethical grounding, the School of Computer Applications is committed to shaping the next generation of IT professionals and thought leaders who will drive technological innovation and societal progress.

VISION

To develop innovative and skilled computer professionals through cutting-edge research, education, and entrepreneurial initiatives, fostering leadership qualities to address the evolving challenges of emerging technologies and contribute to societal advancements nationally and globally.

MISSION

- To deliver cutting-edge education and research opportunities that drive innovation in computer science and applications.
- To maintain state-of-the-art facilities and attract internationally recognized faculty to support advanced learning and research.
- To continuously update our curriculum to reflect the dynamic landscape of emerging technologies and industry needs.
- To foster strong partnerships with industry and the community, enhancing practical experiences and entrepreneurial initiatives.
- To develop graduates who are not only skilled and innovative computer professionals but also ethical leaders, equipped to tackle global and national challenges and contribute to societal advancements.

Dean's Message

"The best way to predict the future is to create it."
– Peter Drucker

At the School of Computer Applications, Dayananda Sagar University, we believe in preparing students not just for today's opportunities but for tomorrow's challenges.

In a world where technology evolves every moment, our mission is to nurture learners who are curious, creative, and ready to lead change.

Our programs — BCA, B.Sc (Data Science), MCA, M.Sc (Data Science), and Ph.D (Computer Science) — are designed as a seamless pathway from foundational learning to advanced research. Students gain exposure to cutting-edge domains such as artificial intelligence, machine learning, data science, cybersecurity, cloud computing, mobile and web technologies, as well as emerging fields like generative AI, Internet of Things (IoT), quantum computing, and blockchain — all supported by a curriculum that blends strong theoretical foundations with hands-on practice.

Beyond classrooms and labs, we place strong emphasis on research, innovation, and industry collaboration. Students actively participate in projects, hackathons, and research groups, present at conferences, and publish their work. Our faculty bring expertise, mentorship, and a global perspective, ensuring that learning goes far beyond textbooks.

We are equally committed to holistic growth. From soft skills and leadership development to internships and placements, every student is guided to become not only an IT professional but also a responsible global citizen. Our alumni, now thriving in leading companies and entrepreneurial ventures, are living examples of what it means to learn, grow, and succeed at DSU.

I warmly welcome you to explore the opportunities at the School of Computer Applications. Together, let us create the future with knowledge, innovation, and purpose.

Dr. S. Senthil
Professor and Dean, School of Computer Applications
Dayananda Sagar University, Bengaluru

About the Programme

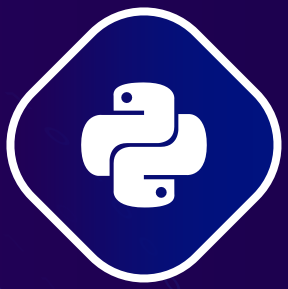
Data is the new intelligence layer driving every modern industry. The M.Sc (Data Science) programme at Dayananda Sagar University (DSU) is designed to develop advanced data professionals who can analyze, model, engineer, and convert data into actionable insights that power strategic decision-making.

This two-year postgraduate program combines rigorous theoretical foundations with immersive hands-on training in machine learning, statistical modelling, big data engineering, AI-based analytics, cloud data pipelines, and visualization systems. Students gain deep expertise in Python, R, SQL, Spark, Hadoop, TensorFlow, Tableau, Power BI, and other industry-standard tools. Through real-world datasets, case studies, and research-driven projects, learners transition from analysts to innovators capable of building intelligent, data-driven solutions.

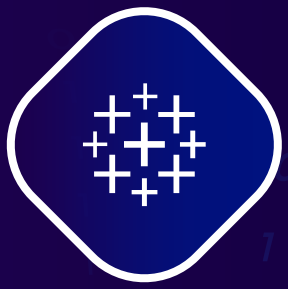
The programme cultivates the ability to solve complex problems, design scalable data platforms, develop AI/ML models, and contribute to high-impact research across domains.

Program : M.Sc. Data Science
Program Duration : 2 Years (4 Semsters)

Get Trained in In-Demand Skills



PYTHON



TABLEAU

POWER BI & SQL

R | Spark | Hadoop | TensorFlow

Tracks

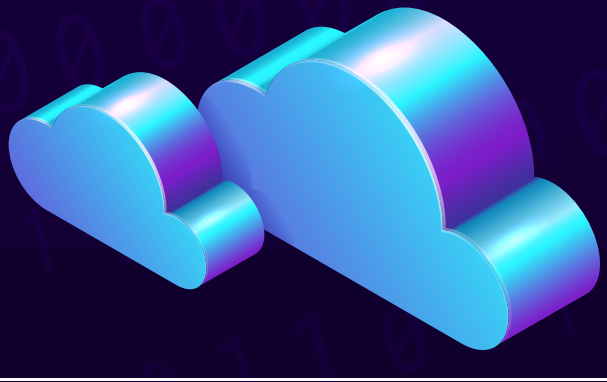
- Artificial Intelligence & Machine Learning
- Data Engineering & Big Data Technologies
- Data Analytics & Data Visualization

Eligibility Criteria

B.E / B.Tech in ECE / IT / EEE / CSE / ISE / TE / BCA / M.Sc or B.Sc in Computer Science / Mathematics / Statistics / Information Science / Information Technology with a minimum of 50% (45% for SC/ST) from a recognized University / Institution, or AMIE, or equivalent.

Programme Outcomes

- Build, optimize, and deploy advanced machine learning and AI models.
- Design scalable data engineering pipelines for structured and unstructured data.
- Apply statistical, mathematical, and computational techniques to solve complex analytics problems.
- Develop research capabilities leading to publications and academic contributions.
- Integrate cloud platforms and big data technologies into data-driven systems.
- Apply ethical, legal, and responsible AI principles in data science applications.



Exciting and Diverse Career Avenues in the Booming Data Science Field!

- Data Scientist
- Data Analyst
- Data Engineer
- Data Architect
- AI Engineer
- Business Intelligence (BI)Analyst
- Machine Learning Engineer
- Big Data Specialist
- Research Scientist
- Fraud Analyst

Where Can Data Science Take You ?

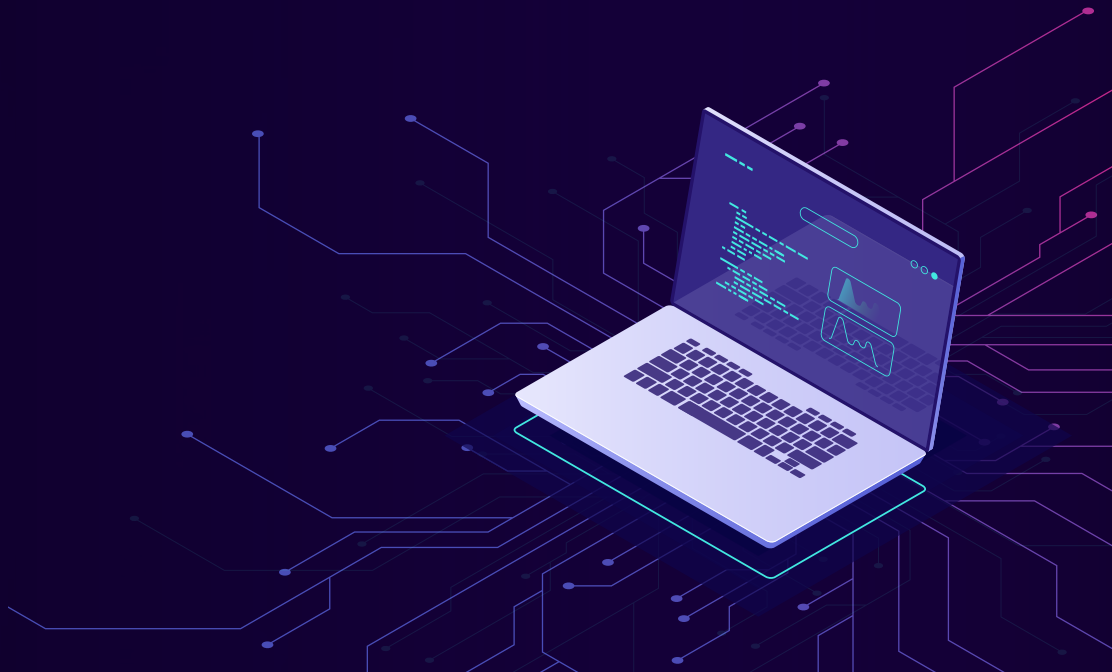
Explore Leading Industries Looking for Your Expertise!

Advanced Information Technology (IT) & Software Development
Financial Services & Fintech
Healthcare and Biotechnology
E-commerce and Digital Marketing
Telecommunications
Smart Manufacturing and Industry 4.0
Government, Defense, and Public Policy
Pharmaceuticals & Clinical Research
Energy, Utilities & Smart Grids
Aerospace & Defense

What Sets Our Innovative Program Apart?

- Innovative curriculum aligned with industry standards, ensuring readiness for the evolving data science landscape.
- Specialized electives are offered across three distinct tracks, enabling students to customize their learning journey:

  Track 1: Artificial Intelligence and Machine Learning
  Track 2: Data Engineering and Big Data Technologies
  Track 3: Data Analytics and Data Visualization
- Comprehensive course delivery by expert faculty with extensive, hands-on data science experience.
- State-of-the-art data labs equipped with advanced tools and technologies, providing a cutting-edge learning environment.
- Intensive, industry-sponsored hackathons for real-time problem-solving and competitive skill enhancement.
- Multi-stage capstone projects with industry mentorship, allowing students to tackle real-world data challenges from ideation to deployment.
- Strategic industry collaborations for premium placements, internships, and career-aligned projects.
- Global and industry-recognized certifications in specialized data science domains, elevating employability.
- Pioneering research opportunities in emerging fields, encouraging innovation and exploration of advanced data science applications.
- Robust career support services, enhancing students' job placement prospects in top-tier companies.
- International exposure through high-impact seminars, workshops, and collaborative hackathons with participants across diverse disciplines.
- Holistic development programs focused on soft skills, teamwork, and leadership for well-rounded growth.



Curriculum

Semester I

- Foundations of Data Science
- Python Essentials for Data Scientists
- Data Mining and Knowledge Discovery
- Data Visualization Principles and Practices
- Mathematical Concepts for Data Science - I
- **Elective 1**
  - Advanced OS Concepts for Data Science (Track – I)
  - Advanced Database Management Systems (Track – II)
  - Advanced Computer Networks for Data Science (Track– III)
- Data visualization lab
- Python Lab

Mandatory Courses

- Research Methodology
- Soft Skills

Semester II

- Machine Learning Applications in Python
- Mathematical Concepts for Data Science - II
- Bigdata Technologies and NoSQL Databases
- Cloud Computing for Data Scientists
- **Elective 2**
  - Bio inspired computing (Track – I)
  - Multivariate Data Science Methods (Track – II)
  - Image and Video Analytics (Track – III)
- **Elective 3**
  - Robotic Process Automation (Track – I)
  - High Performance Computing (Track – II)
  - Time Series Modelling and Forecasting (Track – III)
- Machine learning Lab using Python
- Big Data Technologies Lab

Mandatory Courses

- Technical Certification (Machine learning essentials)
- Soft Skills

Semester III

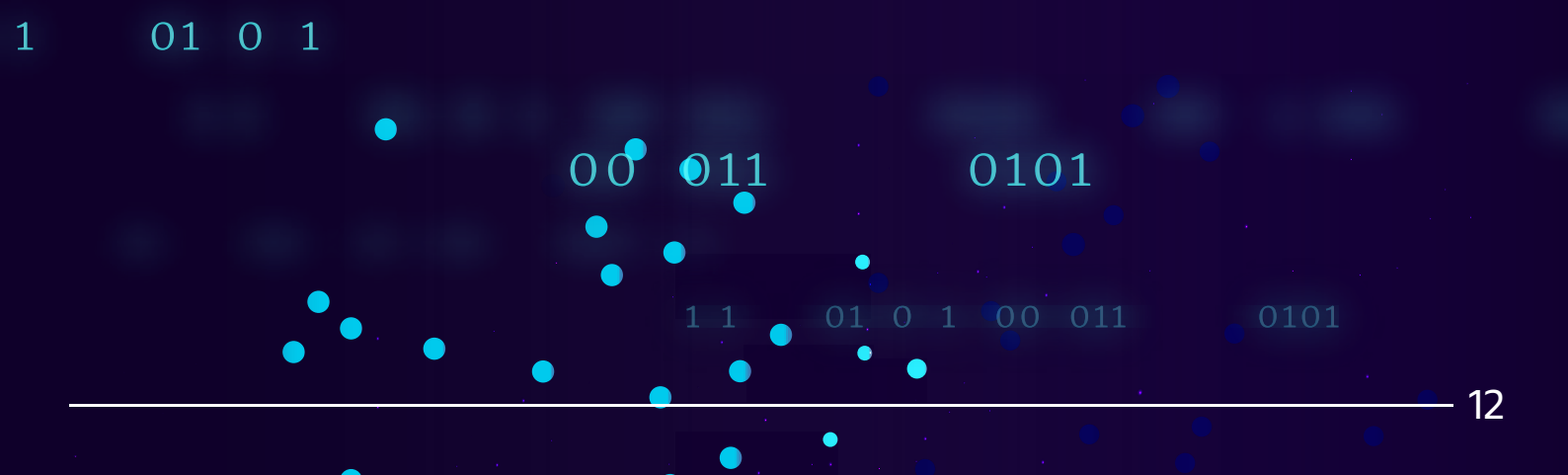
- Neural Networks and Deep Learning
- Security for Data Science
- Advanced Analytics and Optimization
- **Elective 4**
  - Generative AI with LLM (Track – I)
  - Data Analytics for IoT (Track – II)
  - Intelligent Systems Engineering (Track – III)
- **Elective 5**
  - Reinforcement Learning (Track – I)
  - Recommendation Systems Design and Implementation (Track – II)
  - NLP and Text Analytics (Track – III)
- Data Science Capstone Project
- Open Elective

Mandatory Courses

- Technical Certification (Cyber Security)
- Soft Skills

Semester IV

- Research Publication
- Internship / Global Certification (Data Science Certification)
- Major Project



Why Study Data Science?

"Data Science is the engine of the AI economy & every sector is being transformed by it."

Explosive Industry Demand
India is projected to require 1.4 million data and AI professionals by 2026 (NASSCOM, 2024), making Data Science one of the fastest-growing digital careers globally.

AI-Driven Innovation
As businesses adopt AI, automation, cloud analytics, and intelligent systems, demand for skilled Data Scientists and ML Engineers continues to surge.

High-Potential Career Growth
Postgraduates in Data Science command premium salaries and rapidly progress to leadership roles in AI, ML, analytics, and engineering.

Cross-Industry Relevance
Data Science drives transformation in healthcare, finance, e-commerce, defense, telecom, marketing, retail, transportation, and more.

Research Opportunities
Emerging fields such as Generative AI, NLP, IoT Analytics, Deep Learning, and Responsible AI are creating new avenues for academic and industrial research.

If you have analytical thinking, a passion for problem-solving, and a drive to innovate — Data Science is your future.

Why Choose M.Sc. (Data Science) at DSU?

Where Advanced Analytics Meets Research &Innovation

Industry-Aligned Curriculum
Designed with inputs from analytics experts to build strong foundations in data engineering, machine learning, AI systems, and advanced visualization.

Hands-on Data Labs
Cloud-enabled analytics labs with big data clusters and environments for building and deploying real-world AI/ML solutions.

Research-Driven Learning

- Training in research writing and technical communication
- Guidance for developing publishable research
- Exposure to GenAI, IoT analytics, ethical AI, and automation

Structured Project Framework

- Skill Project (Sem II) – Applied analytics project
- Minor Project (Sem III) – Research-focused work
- Major Dissertation (Sem IV) – Industry or research-based capstone

Industry Immersion Sessions

Sessions by Data Scientists, ML Engineers, Cloud Architects, and AI Researchers offering practical insights and case studies.

Global Readiness Through Academic Partnerships

DSU's collaborations with leading technology organizations such as Infosys, IBM, AWS, and others provide students with industry-aligned learning resources and practical exposure. Our academic partnership with EC-Council further strengthens secure coding and digital risk awareness.

International Training, Internship & Placement Pathways

Foreign MoUs provide

- Training in advanced data science and Agentic AI
- TGlobal internships and collaborative projects
- International career exposure

Career Enablement

Portfolio development, analytics aptitude support, interview preparation, and personalized career mentoring.

Interdisciplinary Collaboration

Collaborative projects with healthcare, engineering, management, and IoT domains on Smart City, FinTech, healthcare, and automation use cases.

Career Pathways

The M.Sc (Data Science) programme opens pathways to high-impact analytical, engineering, and leadership roles.

Technical Roles

- Data Scientist
- Machine Learning Engineer
- Data Analyst
- Big Data Engineer
- NLP / Computer Vision Specialist
- AI Engineer
- Data Architect
- Business Intelligence Developer

Research, Innovation & Academic Roles

- Research Scientist
- AI/ML Researcher
- Innovation Lab Specialist
- Ph.D. Research Scholar
- Academic Faculty
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Analytics & Consulting Roles

- Business/Data Consultant
- Decision Science Analyst
- Risk/Fraud Analyst
- Quantitative Analyst
- Product Analyst

Emerging & Cross-Domain Roles

- Cloud Data Engineer
- IoT Data Analyst
- Generative AI Engineer
- Responsible AI Analyst
- Digital Transformation Specialisti

TOP HIRING SECTORS

- IT & Software Development
- BFSI & FinTech
- Healthcare & Life Sciences
- E-commerce & Retail
- Telecommunications
- Manufacturing & Industry 4.0
- Government & Smart City Projects
- Energy, Utilities & Smart Grids

Shaping the Next Generation of AI & Data Leaders

At Dayananda Sagar University, data science education goes beyond analytics — it builds innovators and researchers who shape the intelligence systems of tomorrow.

Join us to analyze, predict, innovate, and lead in the data-driven world.

Why studying M.Sc. (Data Science) in Bangalore sets you up for success?

Bangalore, India's Silicon Valley, is the ideal launchpad for a career in data science. According to a report by NASSCOM, demand for data scientists in India is expected to reach 1.5 million by 2025, with Bangalore as one of the top cities driving this growth. The city provides a rich environment filled with opportunities for growth and innovation, making it perfect for aspiring data science professionals.

Here's why studying B.Sc. (Data Science) in Bangalore sets you up for success:

- Demand for Data Science in Bangalore: In Bangalore, data is the heartbeat of a vibrant tech industry, offering a spectrum of roles from data analysis to AI and machine learning. This city not only fosters career development but also encourages the continuous evolution of skills, keeping professionals at the forefront of the global data science landscape .

- Thriving Data Center Hub: Bangalore is India's second-largest data center hub, with a total area of 3.8 million square feet and a capacity of 190 MW (as of 2023-24). It offers vast resources and connectivity, providing students with access to industry insights and advancements.

- Growing Data Ecosystem: Bangalore is projected to house about 2.5 million square feet of data center space by 2025 (as per industry report), further supporting the growth of the data science job market due to increased data generation and analysis needs.

- High Earning Potential: The estimated total pay for a data scientist in the Bangalore area is around INR17,00,000 per year, with an average annual salary of INR15,00,000 (as per Glassdoor Report)

- Rising Data Startups: Bangalore has seen the growth of over 150 data-centric startups in recent years, indicating a robust entrepreneurial ecosystem that creates job opportunities for data science graduates.

- Access to Industry Events and Conferences: Bangalore hosts numerous tech events, data science conferences, and workshops, giving students access to the latest trends, networking opportunities, and insights directly from industry leaders.

- Collaborative Learning Environment: In a tech hub, students collaborate with peers from diverse tech backgrounds, enriching their approach to data science challenges.

- Global Exposure: With numerous global tech giants in Bangalore, students gain access to internships, projects, and job opportunities with top global companies .

Admissions Helpline Nos:

080 4646 1800 +91 6366885507 Visit: www.dsu.edu.in

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