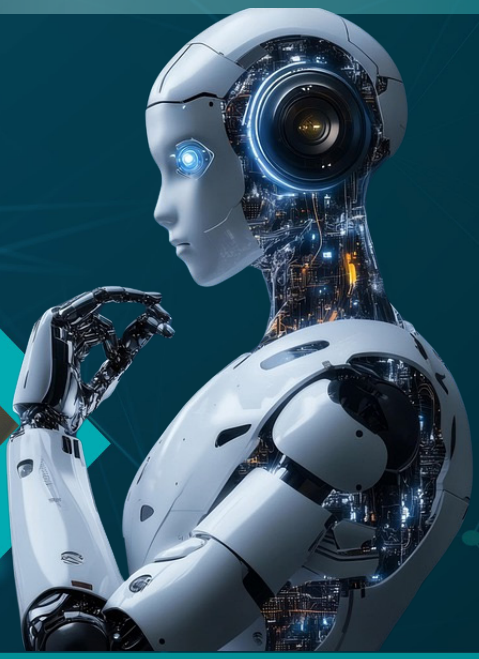
جـامعة عـين شـمس الأهلية
AIN SHAMS NATIONAL UNIVERSITY

Faculty of

Computer Science and Artificial Intelligence

AIN SHAMS NATIONAL UNIVERSITY

Academic Programs



For more details:

support@asu.edu.eg

Data Science and Analytics

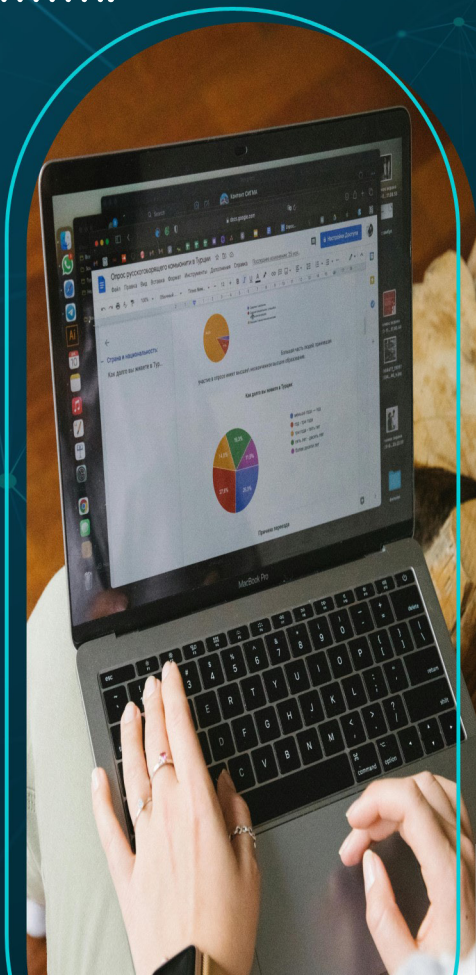
Years of Study / Required Hours for Graduation:
4 years / 137 hours

Language of Instruction:
English

Career Opportunities

Main job opportunities include:

- Data Scientist: Big data analysis, predictive modeling, and machine learning.
- Data Analyst: Extracting analytical reports to support decision-making based on available data.
- Data Engineer: Designing and building big data management and processing systems.
- Business Intelligence (BI) Analyst: Using business analytics tools to derive operational insights.
- Machine Learning Engineer: Building and training AI/ML models to predict outcomes or classify data.
- AI Engineer: Designing and developing AI-based solutions.
- Marketing Data Analyst: Analyzing customer behavior, advertising campaigns, and digital marketing.



- Cybersecurity Data Analyst: Using data for early detection of threats and cyberattack analysis.
- Quantitative Data Analyst: Specializing in building mathematical and statistical models for financial data analysis and complex investment decisions.
- Data Architecture Engineer: Designing, building, and maintaining data infrastructure systems for storage, transfer, and preparation for later analysis.

Target Employment Sectors

- Financial and Banking Sector: Risk analysis, market forecasting, and fraud detection.
- Healthcare and Medical Informatics: Patient data analysis, medical decision support, and health records management.
- E-Commerce Sector: Consumer behavior analysis and optimizing marketing and sales strategies.
- Telecommunications: Network data analysis, service quality enhancement, and customer behavior studies.
- Government and Public Services: Demographic data analysis, urban planning, and public service tracking.
- Energy and Utilities: Consumption forecasting, and network efficiency optimization.
- Transportation and Logistics: Traffic analysis, supply chain optimization, and demand forecasting.
- Digital Media and Marketing: Audience data analysis and digital advertising campaign evaluation.

Target Employment Sectors

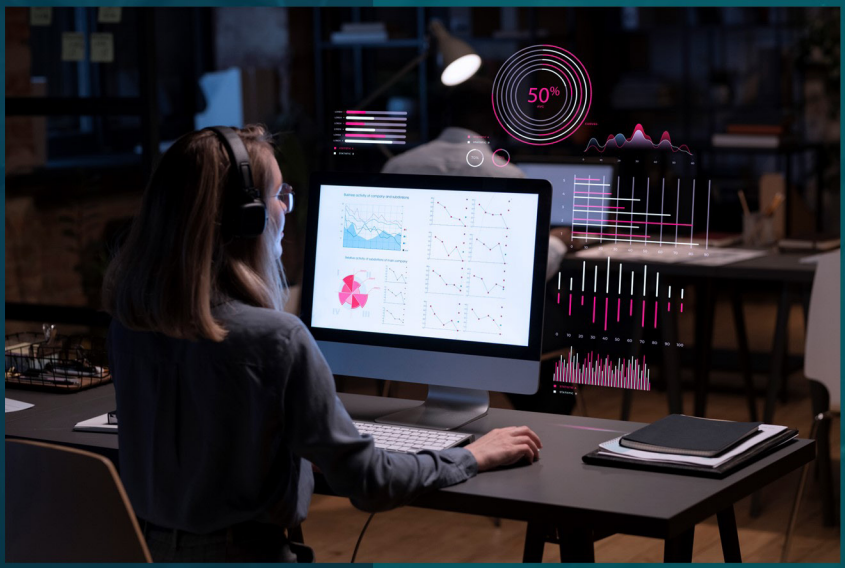
- Government Sector: Digital transformation, smart governance, and data-driven decision-making.
- E-learning and Smart Education: Student performance analysis and personalized content development.
- Education and Research Institutions: Academic performance data analysis, curriculum improvement, and administrative decision support.
- Technology and Software Companies: Building business intelligence platforms, data analysis tools, and recommendation systems.

Program Classification / Faculty

Bachelor of Data Science and Analytics – Faculty of Computer Science and Artificial Intelligence.

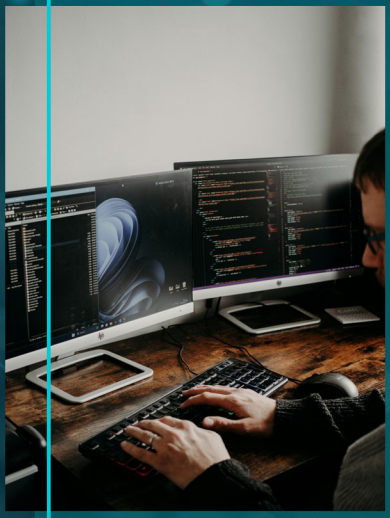
Why choose to join the Data Science and Analytics program ?

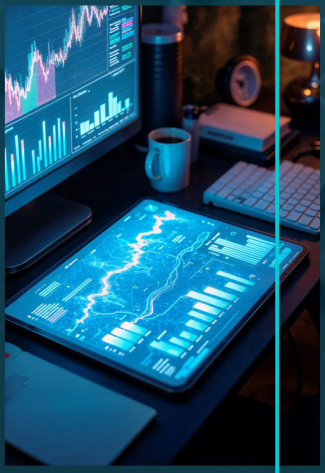
The Data Science and Analytics program offers an integrated curriculum covering data analysis, machine learning, big data management, data mining, AI, and statistical modeling. It meets the growing global demand for experts capable of effectively managing, analyzing, and interpreting large, complex datasets. As industries increasingly rely on data-driven decision-making and innovation, demand continues to rise for data science professionals. This demand is expected to grow with accelerating digital transformation across sectors. The program responds to national and regional needs for specialists in big data analytics and AI, aligned with global trends. It aims to equip students with knowledge and skills to understand, process, and convert big data into actionable insights supporting decision-making across sectors.



Why choose to join the Data Science and Analytics program ?

The program blends theoretical concepts with practical applications in statistics, programming, machine learning, and complex big data analysis using modern tools and environments. It covers essential topics like exploratory data analysis, statistical modeling, databases, AI, and data ethics, linking technical knowledge to practical applications through real-world projects and applications in fields like healthcare, business, and technology.





It addresses the full data life cycle, from specification, collection, and cleaning to management, analysis, and policy-setting based on insights. Graduates will be prepared for an evolving job market with increasing demand for data science and analytics specialists in both government and private sectors. It also offers a strong foundation for those interested in postgraduate studies in this promising field. An ideal choice for ambitious students looking to understand the world through data and contribute to evidence-based, data-driven decision-making.

Computer Science and Artificial Intelligence

Years of Study / Required Hours for Graduation:
4 years / 137 hours

Career Opportunities

Main job opportunities include:

- Software Engineer: Developing desktop, web, and mobile applications.
- AI Developer: Building intelligent systems capable of learning and decision-making.
- Machine Learning Engineer: Designing and developing predictive or classification ML models.
- Computer Vision Engineer: Applications in image and face recognition, autonomous vehicles, and video analysis.
- Robotics Engineer: Designing and developing AI-powered robotic systems.
- Smart Systems Developer: Applications for smart cities, smart homes, and intelligent assistance systems.
- AI Researcher or Analyst: Developing new algorithms or evaluating intelligent systems.

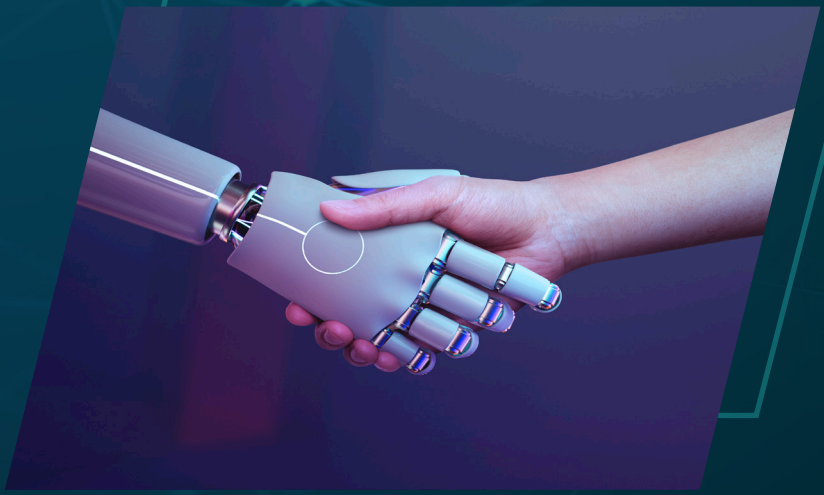
Career Opportunities

Main job opportunities include:

- Natural Language Processing (NLP) Engineer: Developing applications like machine translation, digital assistants (like ChatGPT), and text analysis.
- Data Engineer / Data Scientist: Especially in AI applications reliant on data.
- AI-Powered Cybersecurity Specialist: Network behavior analysis and predicting attacks using smart systems.
- Autonomous Systems Engineer: Designing intelligent systems capable of operating independently in fields like robotics and unmanned aerial vehicles.
- IoT and Smart Systems Developer: Integrating AI with smart devices to create connected intelligent environments.

Target Employment Sectors

- Software and IT Companies: Developing AI applications and smart solutions.
- Autonomous Vehicles and Aviation Sector: Designing independent driving and control systems.
- Healthcare and Medical Informatics: Developing smart diagnostic applications, medical imaging analysis, and clinical decision support systems.
- Cybersecurity Sector: Using AI to detect and predict cyberattacks.
- Industry and Smart Control: Applying AI systems for production line monitoring.
- Government and Public Services: Applying AI in smart city management and e-services.
- Smart Cities and IoT: Designing smart monitoring systems, sensor networks, and infrastructure data analysis.
- Manufacturing and Robotics: Developing intelligent control systems and industrial robots.

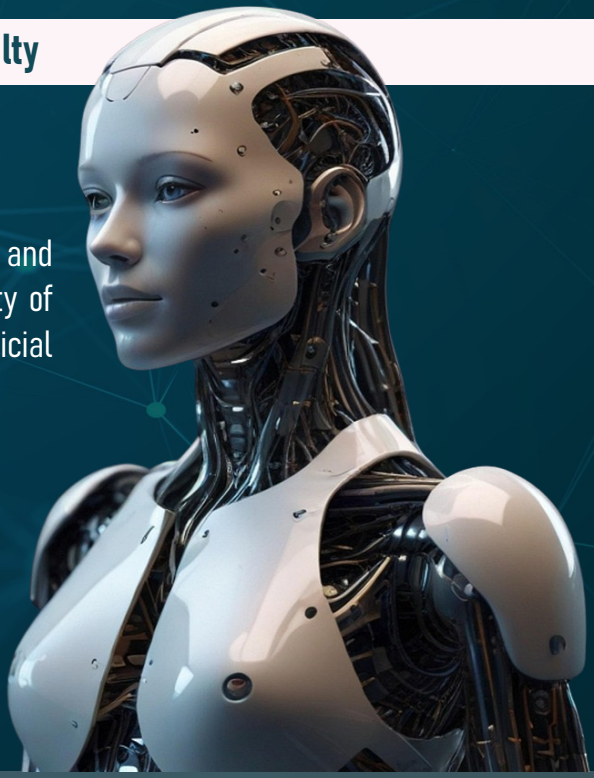


Target Employment Sectors

- Digital Media and Content Analysis: Smart text generation systems.
- Security and Defense Sector: Computer vision, security data analysis, and predictive systems.
- Smart Education Sector: Developing adaptive learning platforms powered by AI.
- Retail and E-commerce: Smart recommendations, chatbots, and customer behavior analysis.

Program Classification / Faculty

Bachelor of Computer Science and Artificial Intelligence – Faculty of Computer Science and Artificial Intelligence.



Why choose to join the Computer Science and Artificial Intelligence program ?

The Computer Science and Artificial Intelligence program aims to prepare qualified professionals equipped with knowledge and skills to understand and develop modern AI technologies and applications.

The program integrates theoretical foundations and practical applications in machine learning, computer vision, natural language processing, and robotics, emphasizing the use of advanced tools and technologies.

The curriculum is built on up-to-date scientific approaches aligned with the latest global trends in computer science and AI, focusing on developing analytical, creative, and problem-solving skills.

It encourages project-based learning and real-world applications, enhancing student readiness for the job market and offering opportunities to participate in developing intelligent solutions serving society in fields like healthcare, education, industry, and cybersecurity.

Why choose to join the Computer Science and Artificial Intelligence program ?

The program provides an integrated educational environment supporting innovation and scientific research, under the supervision of distinguished academics and specialists. It also opens broad opportunities for graduates to pursue postgraduate studies or work in future-oriented jobs such as smart systems developer, advanced data analyst, and machine learning researcher. This program is an ideal choice for ambitious students seeking to be part of the technology future, contributing to shaping the smart world and advancing AI applications in various fields. With increasing institutional reliance on AI and smart automation technologies, global demand is rapidly growing for specialists in AI and computer science. This demand is expected to continue rising as intelligent systems, smart cities, and digital transformation evolve across vital sectors. The program is a direct response to national and regional needs for specialized expertise capable of developing AI applications in healthcare, industry, financial services, and education, aligned with national strategies and Egypt's vision.