الجامعة المصرية اليابانية للعلوم و التكنولوجيا
エジプト日本科学技術大学
EGYPT-JAPAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

Professional Diploma

Data Engineering

About Data Engineering

Data Engineering is an emerging field incorporating interdisciplinary activities, tools, and technologies, to create data-centric products, applications or programs that address a wide range of disciplines including healthcare, business and financial analytics, agriculture, Industry 4.0.

Data engineering can be divided into two tracks, big data analytics and big data management. It is making deep incursions into the industry, government, health, and journalism, and many other disciplines.

Overview

The Data Engineering professional diploma is offered by the Department of Computer Science and Engineering at E-JUST.

It provides a broad introduction to the field of Data Engineering, including how to extract, clean, store, and manage large volumes of data, and how to analyze such data and infer insights.
Data Engineering requires the ability to integrate data, operate on data at scale, analyze data, make predictions, find patterns, and form and test hypotheses. It incorporates practices from a variety of fields in computer science, chiefly Machine Learning, Statistics, Databases, and Visualization. The diploma program provides a foundational understanding of these different disciplines in addition to intensive hands-on practices.

Who is it for?

The program is designed for local and international students, from various academic backgrounds. To achieve the practical and academic goals, the program seeks fresh graduates, practitioners and scholars who want to acquire applied and scientific skills and advance their knowledge and skills in preparation for a career in the aimed programs.

About the Diploma

1- Study Program

Embedded into the vibrant academic context of E-JUST University, the program is taught and administered by renowned experts.
Core components of the program and areas of specialization include:

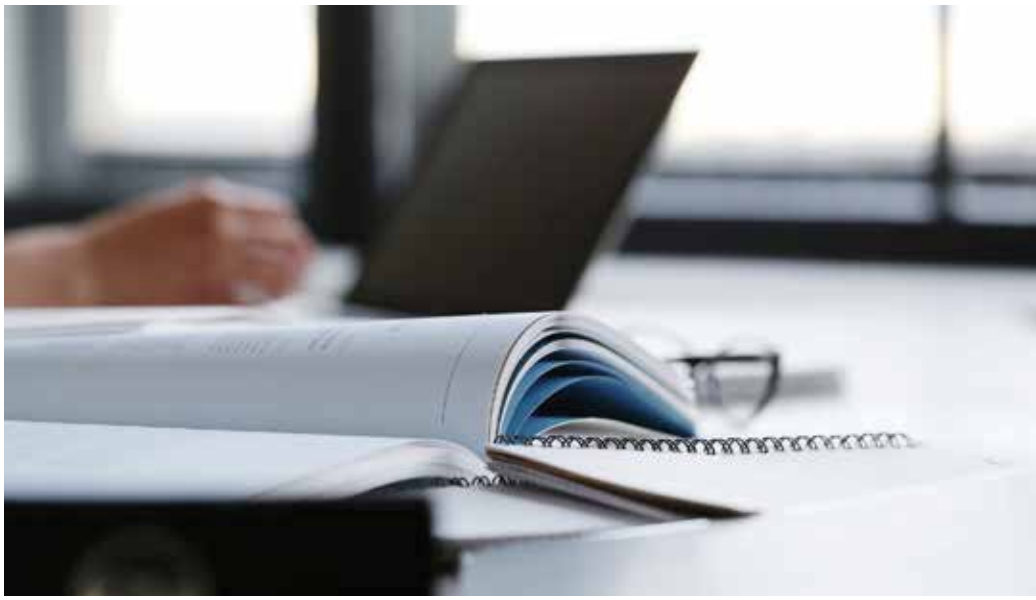
- **Machine Learning**
- **Statistical Modeling and Predictive Analytics**
- **Visual Data Analytics**
- **Exploratory Data Analysis**
- **Big Data Management**
- **Bioinformatics**
- **Big Data in Finance**
- **Image Analysis and Computer Vision**
- **Natural Language Processing**
- **Speech Analysis**

2- Duration of Study

The Data Engineering program is a one-year 20-credit hours program.

Participants have to pass 4 core courses (12 credit hours), two elective courses (6 credit hours) and 2 labs (2 credit hours) in the area of specialization he/she would be interested in.

The area of specialization should be defined by E-JUST at the admission time.



3- Learning outcomes

Students who complete the program will be able to do the following:

- Understand the different components of the data processing pipeline
- Understand and provide insights after working with unstructured, messy data
- Create specific requirements for a data-centric application that addresses a specific problem or question
- Decide which machine learning techniques apply to a particular problem and implement those techniques without a pre-built library
- Gain knowledge and understanding of the design steps of learning architectures and the fine-tuning of its hyper-parameters
- Decide which algorithms apply to given big data applications
- Use a variety of statistical tools, software packages, and systems for processing and extracting insights from large volumes of data
- Know and understand the key steps to acquire and integrate data
- Know how to do data cleaning, entity resolution, information extraction, and data integration

Career Opportunities

Demand for data engineers is massive.
Companies and institutions in almost every field like industry, healthcare, commerce, transportation, and the public sector, need experts for data acquisition, data management, and data analysis.

With this Professional Diploma degree in Data Engineering, you will excel in this most exciting and rewarding field with potentially very attractive income. You'll also have the chance to move on to a Professional Master degree (M. Eng.)

Admission Requirements

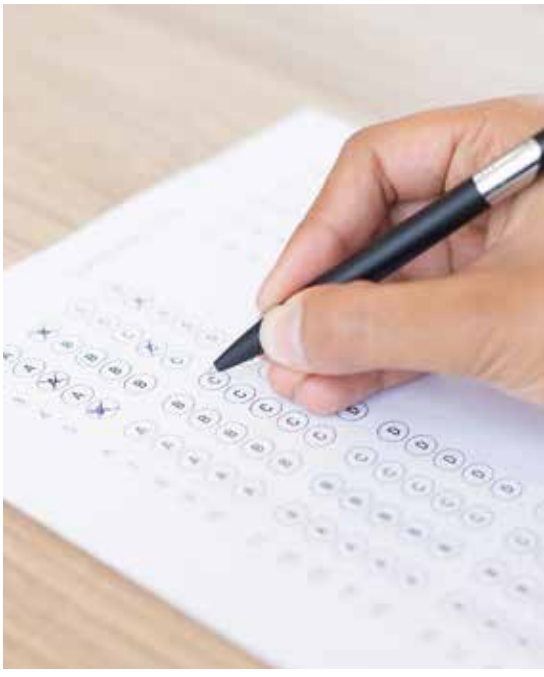
1. A bachelor's degree from a practical faculty (or any other equivalent national or international certificates approved by the Supreme Council of Universities in Egypt) with satisfactory prior knowledge in relevant disciplines.

2. Showing proficiency in the English language by providing one of the following:
   - TOEFL score of 60 IBT
   - IELTS score of 5.5
   - proof of studying in English
   - passing an English exam conducted by E-JUST

3. Passing the entrance examination.

4. Passing a personal interview.

5. Applicants who do not have educational background may be required to take complementary courses before starting regular courses or in parallel.



How to apply?

- Create an account via the link https://executive-admission21.ejust.edu.eg/login
- Submit all required documents.
- You'll receive a confirmation email for your submission.

About E-JUST

Egypt-Japan University of Science and Technology (E-JUST) is a research-oriented university with the determination to cultivate an academic environment and become a benchmark for Egyptian and African countries in higher education. The university was established in May of 2009 based on a bilateral agreement between the Egyptian and Japanese governments. Later in 2010, it was ready to accept its first batch of graduate students and start the excellence journey.

In September 2017, E-JUST reached another milestone when it inaugurated the Faculty of International Business and Humanities (FIBH). It was also in that year that the university began accepting high school students in both the Faculty of Engineering and the Faculty of International Business.
The partnership between both governments is extremely strong to ensure the ease of the educational journey of students. The Japan International Cooperation Agency (JICA) fully supports E-JUST by sending their experts to assist and guide in the technical transfer and management of the university. JICA also sends academic experts from the Japanese Cooperating Universities (JCU) to support in teaching, joint research and co-supervising the graduate students. In addition, JICA provides state-of-the-art equipment and tools for educational and research purposes. As for the Egyptian government, it fully supports the university's needs from capital to operating expenses.

All decisions that govern the university are done through its Board of Trustees (BoT) members, which is comprised of 20 prominent figures from Egypt and Japan. The Egyptian side includes a representative of the Ministry of Foreign Affairs, a representative of the Ministry of International Cooperation, and a representative of the Ministry of Higher Education. Whereas the Japanese side includes the Senior Vice President of JICA, a representative of the Ministry of Education, Culture, Sports, Science and Technology, and a representative of the Ministry of Foreign Affairs, and the presidents of five leading Japanese universities.

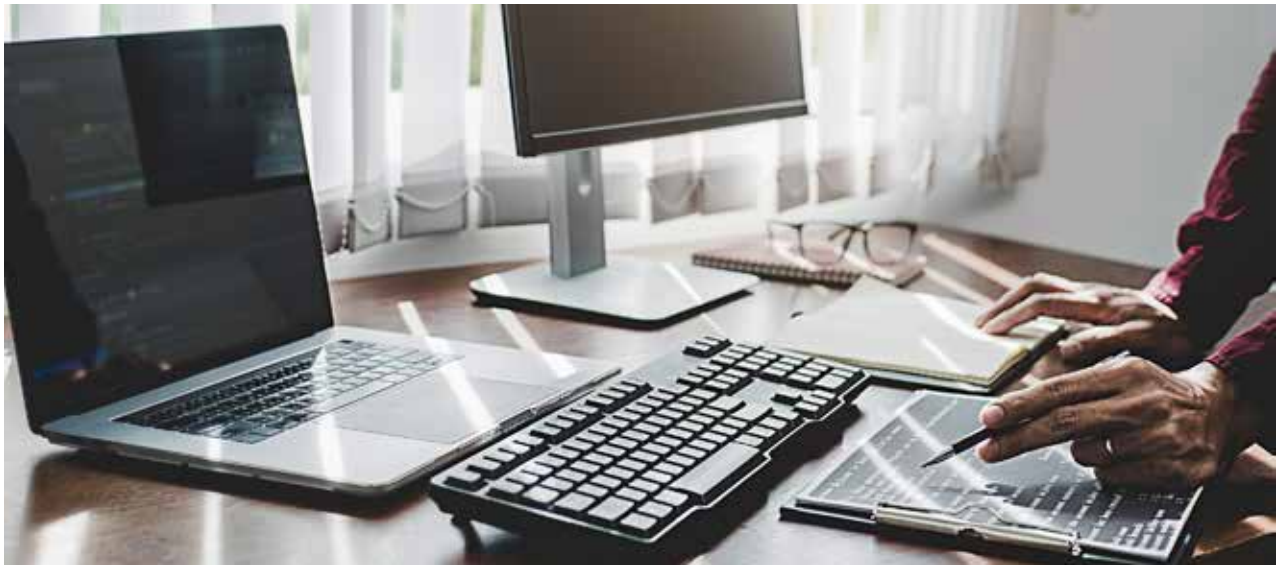
About the CSE Department

The Department of Computer Science and Engineering enjoys an enriching environment fostering high quality research and teaching.

The underlying strength includes experienced faculty, hardworking students, and supportive administration.

The department seeks to establish clear understanding for subject matters, and encourages open discussions to further strengthen understanding, all driven by passion for learning. The department tackles interesting problems with direct relation to society.

Corresponding research themes include AI, high-performance computing, and performance modelling. The department has attracted various research grants and has a strong collaboration with other universities in various countries including Japan, France, Italy, and the USA.
The department has also a recent spin-off company, providing for technology transfer to society. The department has a variety of computing facilities. This includes high-performance computing clusters, running a cloud environment. The facilities also include various embedded devices, sensors, and robots. Both enable an interesting computation environment for diverse problems.



For more Information

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