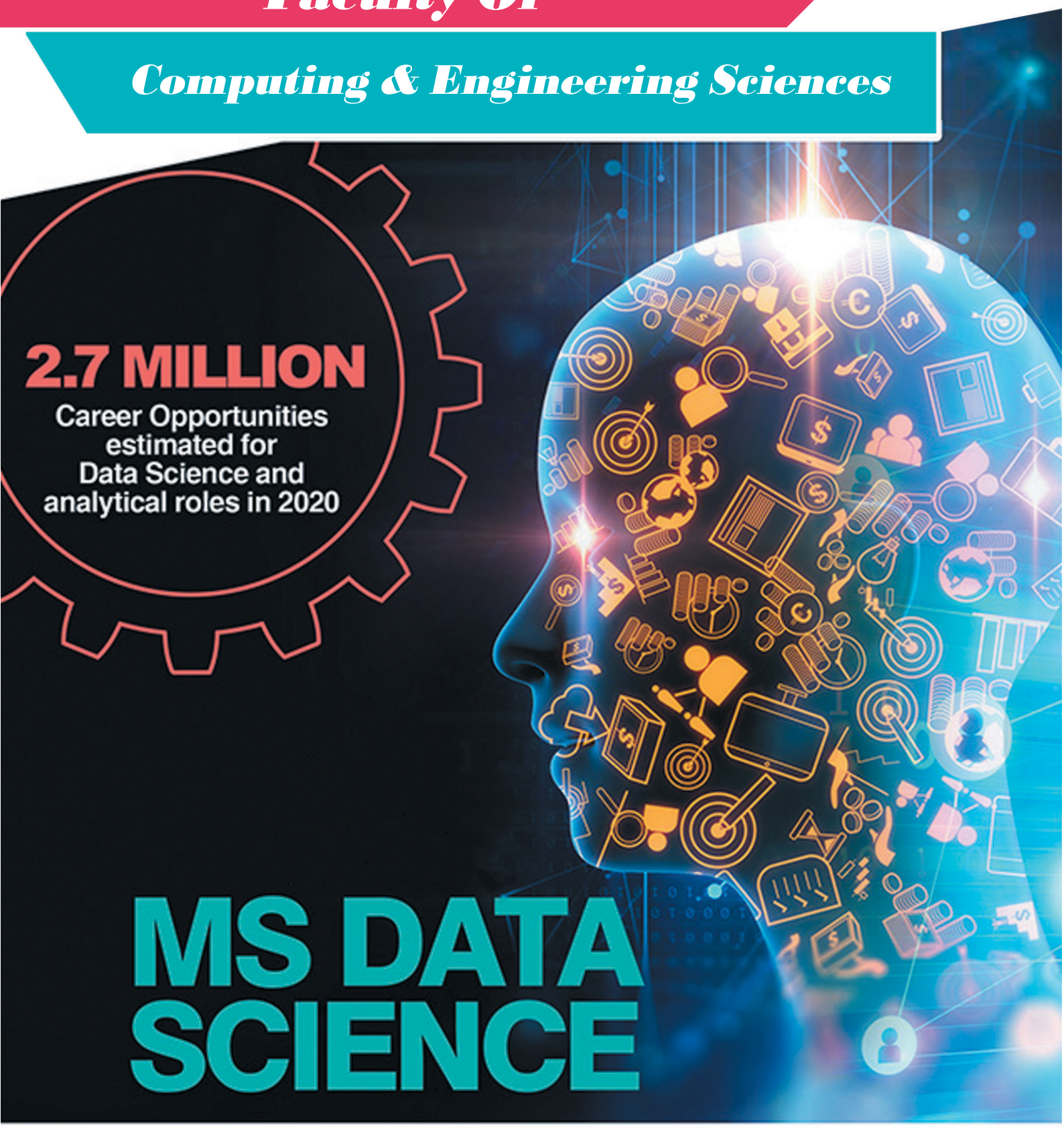
SZABIST
ISLAMABAD

Discover
Yourself

Faculty Of

Computing & Engineering Sciences



Apply online at : admissions.szabist-isb.edu.pk

Shaheed Zulfikar Ali Bhutto Institute of Science & Technology

Master of Science

Data Science

MS (Data Science) program has been designed to give students the option to be part of a data science endeavor that begins with the identification of business processes, determination of data provenance and ownership. The program is of 2-years duration offered in the evening. It requires 30 credit hours including 3 core courses (3x3=9) and 2 specialized data science courses (2x3=6). Thesis of 6 credit hours is mandatory. The maximum time limit to complete the MS(DS) degree is 4 years.The program is going to be relevant in terms of job creation and artisanal smart business generation. Graduates from this program would definitely avail the early-bird advantage. .

Data is the new oil.
~ Clive Humby

Informtion is the oil of the 21st century, and analytics is the combustion engine.
~ Peter Sondergaard

Torture the data long enough, and it will confess.
~ Ronald Coase

You can have data without information, but you cannot have information without data.
~ Daniel Keys

Objectives

- To equip students to transform data into actionable insights to make complex decisions.
- To enable students to understand and analyze problems and arrive at computable solutions.
- To expose students to the set of technologies that match those solutions.
- To gain hands-on experience on data-centric tools for statistical analysis, visualization and big data applications at the same rigorous scale as in a practical data science project.
- To understand the implications of handling data in terms of data security and business ethics.

Eligibility Criteria

Students with 16-years of education in the following domains

* Computer Science
* Software Engineering
* Information Technology
* Computer Engineering
* Electrical Enginnering
* Statistics/Mathematics

CURRICULUM

FIRST YEAR

FIRST SEMESTER

- Tools and Techniques for Data Science
- Statistical and Mathematical Methods for Data Science
- Elective I

SECOND SEMESTER

- Machine Learning
- Specialization-Elective-I
- Specialization-Elective-II

SECOND YEAR

THIRD SEMESTER

- Elective II
- Thesis (Part-I)

FOURTH SEMESTER

- Elective III
- Thesis (Part-II)

ELECTIVES COURSES

- Advance Computer Vision
- Algorithmic Trading
- Text Mining
- Bayesian Data Analysis
- Big Data Analytics
- Bioinformatics
- Cloud Computing
- Dep Learning
- Computational Genomics
- Data Visualization
- High Performance Computing
- Inference & Representation
- Probabilistic Graphical Models
- Scientific Computing in Finance
- Time series Analysis and Prediction
- Introduction to Smart Cities and Smart Homes
- Introduction to R for Data Science
- Introduction to Python for Data Science
- Implementing Predictive Analysis
- Data Science in Cyber Security
- Business Context Modelling
- Advanced Topics in Decision Support Systems
- Pattern Recognition
- Graph Analytics for Big Data
- Mining Massive Datasets
- Social Network Analysis
- Natural Language Processing
- Deep Reinforcement Learning
- Distributed Data Processing and Machine Learning

FEE STRUCTURE

Admission Fee	Rs. 20,000
Security Deposit	Rs. 10,000
Student Activity Fee	Rs. 1,000
ID Card Charges	Rs. 150

Fee per Course	Rs. 19,050
Fee per Semester	Rs. 57,150
Total	**Rs. 88,300**

SZABIST
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SZABIST

has been awarded **81 Million PKR** by HEC to establish a Predictive Analytics Lab under **Pakistan's First National Center for Big Data & Cloud Computing** to advance in the emerging field of Data Science.