ROCHESTON® CERTIFIED
BIG DATA ANALYST

Certified by Rocheston®

RCBDA® Certification Program Guide

What is Big Data?

Every major industry all over the world is experiencing a data boom today. And with great power, comes great responsibility. With this data explosion, businesses are concerned with managing and handling the totality of raw data. Big Data can be seen as related to Artificial Intelligence (AI) in the same way that Automation and Robotics is to Internet-of-Things (IoT).

Why Big Data is Important?

Digital content generation is set to increase by over 30 times in the upcoming decade.. Industries across domains are set to consume both structured and unstructured data. Big data tech such as Hadoop and cloud-based analytics carry huge positives as they help enterprises make quick, cost-effective decisions.

Big Data brings huge efficiency boosts to businesses the world over. By 2036, Deloitte expects to have 100,000 of its legal positions automated. Online streaming service Netflix saved 1 billion US$ by delivering personalized choices of content to its clients. PayPal utilizes at least 3 machine learning approaches to mitigate risk and fraud.
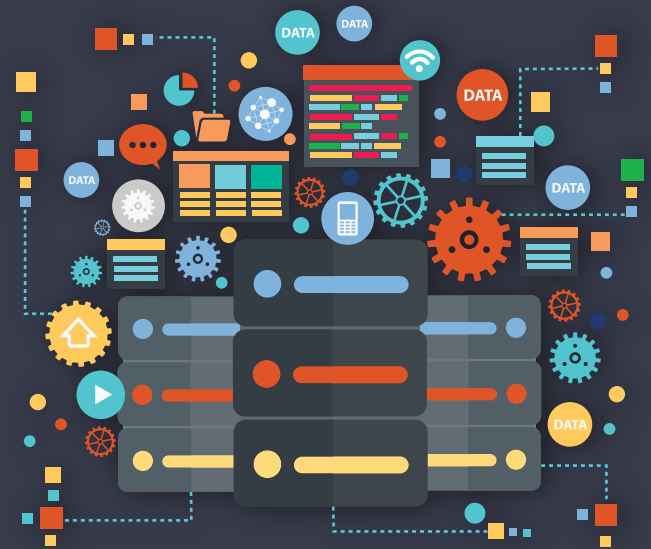
The Big Data Market

The world big data market is set to reach a staggering **US$ 118.52** billion by the year **2022. The CAGR has experienced a growth of 26% from 2015 to 2022.** Growth of client/business data, enhanced information security, and increased corporate efficiency, **remain** the root cause behind this growth.

An escalation in demand for advanced analytics and data warehousing among apps of big data provides ample scope and opportunities in the market. The usage and awareness of big data is constantly increasing in business, and this trend is expected to continue.

Key players in the big data space include 1010data Inc, Amazon Web, Accenture, Dell, Cloudera Inc., SAP, SAS, Oracle, Microsoft, Hitachi, Guavus Inc., Palantir Technologies Inc., HP, IBM, and Teradata Corporation.

Who Needs RCBDA?

- Retail/telecom will benefit from predictive models that assist in understanding consumer preferences/behaviour
- Insurance/sales companies can use CDBAs to understand the product usage patterns of their clients
- Public health and healthcare officials can use CBDAs to combine medical data with individual/group data to assist in monitoring and predicting illness outbreaks
- Site owners can analyze collective data with big data algorithms and utilities

For industries requiring optimization of business processes and supply chain delivery cycles, HR execs who need to enhance talent acquisition, staff administration, and company goals, and R&D pros who need to understand gigantic amounts of information stored across various network systems, RCDBAs are the all-in-one package.

```javascript
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  s = global.lastScrollPx > $(r.scroll_container).scrollTop();
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    var p = Date.now(),
        m = p - global.lastScrollDown;
    if (!(m > r.time_limit)) return !1;
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    else return !1
else return !1

on redraw_offline_lay(t, a, o) {
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    s = global.lays[r].name,
    n = get_number_of_frame(s);
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 r p = FRAMES[n],
    m = p.template,
    c = $("#lay_" + t),
    h = global.lays[r];
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    o()

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Objectives of RCBDA

Big Data has a huge role to play in society's progress and innovation. **It has altered the way in which individuals conduct business and its usefulness is only restricted by human creativity. Students, professionals, and businesses** alike can utilize predictive analysis and other big data techniques for organizational efficiency, and a competitive edge irrespective of industry size.
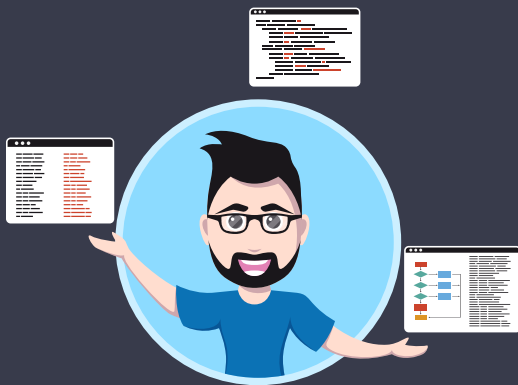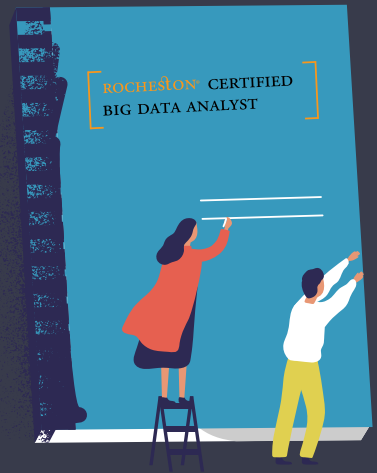
The big data analyst will have a broad understanding and knowledge of real-time analytics and business intelligent platforms . They should be capable of working with SQL databases and should have knowledge of several programming languages. In addition, they will also have a working knowledge of statistical software packages. Knowledge of Hadoop and MapReduce is also essential. With the use of scripting languages, a RCDBA will be able to produce new insights from data sources.

Role of an RCBDA

A big data analyst is the interface between organizations and information processing systems. They use ML (machine learning), data analytics, and AI (Artificial intelligence) to assess the technical performance of an enterprise. A RCBDA is a critical asset across various industry sectors and can take on a wide variety of roles in a business.

The key functions of a big data analyst are:

- Profile source info and set characteristics
- Identify data trends from sets, supply accurate data models, code and produce data rules from the analysis
- Carry out big data processes (for eg. text connotation and filtering)
- Initiate and execute technical/pricing negotiations with data providers
- Produce solutions for real-time distributed data processing
- Look at data sources and search for big data predictors
- Execute cross-functional and design workshops for coming up with business goals and best work practices

Skills You Will Learn in RCBDA

The following is the ideal skill set for a big data analyst:

- NoSQL
- Apache Hadoop
- Machine Learning
- Data Visualization
- Apache Spark
- Programming languages
- Quantitative analysis
- Problem Solving
- SQL
- Data mining

Job Prospects in Big Data

The following are a few of the job designations that are prevalent in organizations using big data analytics:

- Big Data Manager
- Big Data Analytics Business Consultant
- Chief Data Officer
- Big Data Engineer
- Big Data Scientist
- Analytics Associate
- Business Intelligence and Analytics Consultant
- Metrics and Analytics Specialist
- Big Data Visualizer
- Big Data Analytics Architect
- Big Data Solutions Architect
- Big Data Researcher
- Big Data Consultant

Demand for RCBDA

There is an ever increasing demand for analytics professionals in industry. As the saying goes, data/information is a moot point without the skill to analyze it. The job openings in big data analytics and management have increased in comparison to last year.

The demand, while ever escalating, is not met with consistent supply. This makes quality big data education more relevant than ever before. This deficit in supply is found the world over, and is not restricted to one specific geographic area. This heightened demand for data analytics skills is increasing the potential salary for candidates. Businesses are willing to pay big bucks for the appropriate skill sets.

Big Data analytics is currently being prioritized by organizations across the world. There is a strong belief that better analytics enhances the performance of organizations. Analytics is rapidly becoming a key factor in decision-making, and as a result it is witnessing rapid adoption. Big Data analytics is becoming ubiquitous and there is currently rapid growth in semi-structured and unstructured data analytics. Big Data is poised to be a disruptive presence, set to change industry.
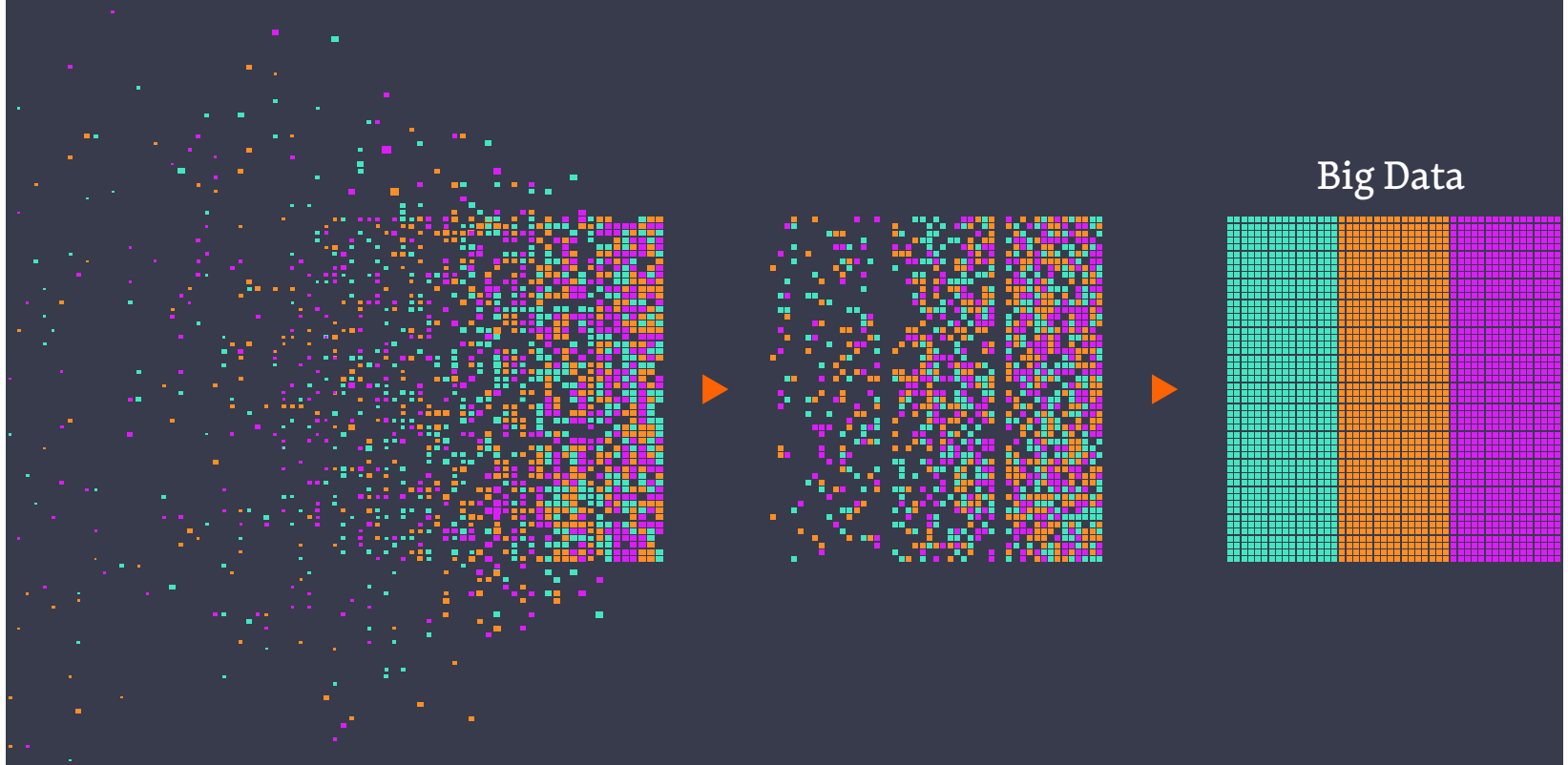
Big Data

SYLLABUS

Module 1: Basics of Big Data

- What is Big Data
- Big Data systems
    - Volume
    - Velocity
    - Variety
    - Veracity
    - Validity
    - Volatility
- Where does Big Data come from
- What makes Big Data valuable
- Data Science vs Big Data vs Data Analytics
- What is Structured and Unstructured data?
- What's unique about Big Data

- Leveraging Big Data
- Why is Big Data the next big thing
- What are the opportunities for Big Data
- Risks of Big Data

Module 2: Concepts of Big Data

- Immutability
- Data Serialization
- Batch Processing
- Stream processing
- Cluster Computing
- Data Mining
- ETL
- Data Warehousing

Module 3: Big Data frameworks

- Designing Algorithms
- HADOOP
  - Parquet
  - Sqoop
  - HDFS and YARN

- Impala
- Apache Spark
- PIG
- Hive
- NoSQL

Module 4: Big Data Platfor

- Cloudera
- Amazon Web Services
- Hortonworks
- Microsoft HDInsight
- IBM
- Teradata Enterprise Access for Hadoop
- Intel Distribution for Apache Hadoop
- Google
- Oracle
- CISCO

Module 5: Infrastructure of Big Data

- Big Data life cycle
  - Ingesting Data
  - Persisting the data in storage
  - Analyzing and Computing the data
  - Interpreting the results
- Government approval and policy
  - Mauritius Resolution on Big Data

Module 6: Deep Learning

- What is deep learning?
- Supervised Learning
- Unsupervised Learning
- How to train and optimize basic neural networks, convolutional neural networks and long and short-term memory networks
- Learning systems in TensorFlow
- Caffe
- Theano
- Torch

Module 7: Big Data Business models

- Making money with big data
    - Information based differentiation
    - Information based brokering
    - Information based delivery networks
- Types of big data business models
    - Data users- Use data to make better decisions
    - Data suppliers- Supply data
    - Delivery networks- Use data to provide ad delivery platforms
    - Data facilitators- Sell tools to analyse big data

Module 8: Understanding relationship between Big data and IoT

Module 9: Entrepreneurship Opportunities with Big Data

- Knowing your Big data business model
- Hiring and setting up the right team.
- Funding
- Infrastructure
- Webhosting
- Development and design
- Marketing

Module 10: Big Data Case Studies

- Big data and the public sector
- Big data in retail
- Big data in learning
- Big data in transportation
- Big data in healthcare
- Big data in finance
- Big data in advertising
- Big data in entertainment and media
- Big data in manufacturing
- Big data in cybersecurity
- Big data in computer forensics
- Big data in government surveillance
- Big data in scientific analysis
- Big data in astronomy
- Big data in smart cities
- Big data in Industry 4.0
- Big data in autonomous vehicles
- Big data algorithms in Internet search engines
- Big data in the film industry

Module 11: Ethics of Big data

- Privacy concerns of Big data
- How much data is too much data
- Using data to manipulate markets

Module 12: Machine and Deep Learning
**Module 13:** Artificial Intelligence and Robotics

The RCBDA **Training Program**

What the course will consist of:

- A 5-day Training Program
- Time: 9:30 AM – 6 PM
- The Provision of an Active Web Portal
- Seminars Conducted by Qualified Engineers
- Best in-class environment
- Exam can be taken on Rocheston Cyberclass or Pearson VUE testing platform.

Cost

For pricing in your region, please contact the local distributor.
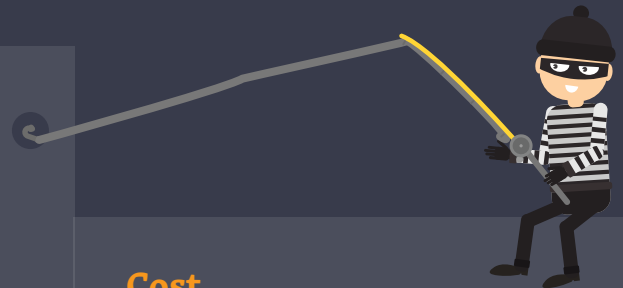
RCBDA **Exam**

Details about the exam process:

- Online Exam delivered through **http://cyberclass.rocheston.com**

- Multiple Choice Objective Questions

- Total count - approximately 90 questions

- Pass Percentage: 70%

- Retake Policy - You may retake the exam any time on an additional fee. For further details contact the exam coordinator.

The exam will be held on the last day of the program. It will review candidate's understanding of the course and test the understanding by means of specific objective questions.

The Cyberclass **Web Portal**

The access to an online E-learning platform will be given to attendants on registration. It will contain a series of study videos, pre-recorded lectures, white papers, educational animations and power point presentations. The Web Portal can be used to catch-up on a missed session or to view an attended session again.

http://cyberclass.rocheston.com

Course **Completion**

On completing the course and successfully passing the exam, you will be provided with RCIE certification. You are free to use the logo as per the Terms & Conditions as a Rocheston Certified Professional. You will also receive a Welcome Kit and login information to access the Members' Portal. The Members' Portal is an online forum for the Certified IoT Engineers to interact. It will be an active portal with relevant weekly updates and news. The certification is valid for two years and it can be renewed online. Contact the course coordinator for enquiries about the renewal fee or downloading of the updated course material.

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THIS CERTIFICATE IS PRESENTED TO

Jason Springfield

FOR COMPLETING ALL THE REQUIREMENTS TO BECOME A
ROCHESTON CERTIFIED BIG DATA ANALYST

HAJA MOHIDEEN
PRESIDENT & CEO

rcbda

At ROCHESTON

We provide training, certification and accreditation that improve an organization's business practices by defining and implementing innovative programs.

At its core, Rocheston is an innovation company with cutting-edge research and development in emerging technologies. Our programs are carefully and comprehensively designed to impart the best of knowledge and understanding about Cybersecurity, Innovation, IoT, Big Data and Business Leadership and help professionals and companies achieve business excellence.

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