



Marwadi
University
Marwadi Chandarana Group

MARWADI EDUCATION FOUNDATION'S GROUP OF INSTITUTIONS
GAURIDAD CAMPUS, RAJKOT
DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY

Scope of Data Science and Career Roadmap

Date: 15-05-2024

Event Report



SCOPE OF DATA SCIENCE AND CAREER ROADMAP was an event conducted by Data Science Cub on online mode. The event was mainly focused on which are the scopes of data science roadmap on career on data science. Flow of the event was:

1. About DS club:

The session starts with the introduction of DS Club, developed by students of ICT department and guided by Professor Nishith Kotak of ICT department, aims to explore vastness of Data Science and Data visualization. The club also aims to teach their members that how data can be used to find conclusions and make correct decision after correct analysis of data.

2. What is Data Science?

Data science is a field that uses data to create insights and strategies for businesses and industries. It's a multidisciplinary field that combines principles and practices from many other areas, including: mathematics, statistics, business, artificial intelligence, and computer engineering.

3. Goal of the Event:

The structured learning path for data science begins with Python fundamentals and progresses systematically to advanced topics, building a strong foundation for students. The comprehensive curriculum encompasses Python programming, statistics, feature engineering, databases, machine learning, deep learning, and MLOps, while providing access to live sessions, tutorials, and playlists to enhance practical skills through hands-on experience. Students develop specialized expertise in various tools including Flask, MongoDB, MySQL, and Apache Cassandra, which are essential for professional data science work. The program emphasizes industry-relevant technologies such as GitHub Actions, CircleCI, Docker, Kubernetes, and AWS SageMaker to improve productivity, collaboration, and deployment capabilities in real-world



projects. This well-rounded approach ensures learners develop both the theoretical knowledge and practical expertise required for success in the dynamic field of data science.

4. Scopes of Data Science:

➤ **Current Market Statistics**

- Global market projection: \$103 billion by 2027
- India's data science education market: Expected to reach \$1.39 billion by 2028
- Industry CAGR: 57.5% growth rate
- Job growth rate: 36% by 2031 (US Bureau of Labor Statistics)

➤ **Job Market Analysis**

- Active job postings in India: 1,500-2,000 positions
- LinkedIn: Approximately 1,950 data science jobs
- Steady demand growth: 64% increase over the past 5 years
- Average salary range in India: ₹7-19 LPA (Glassdoor)
- Senior positions can command salaries of ₹28 LPA or higher

➤ **Career Paths and Roles**

✓ **Primary Career Tracks**

1. Machine Learning Engineer
 - Salary: \$150,000+
 - Experience required: 5+ years
 - Focus: ML algorithms, model deployment
2. Data Architect
 - Salary: \$140,000+
 - Experience required: 7+ years
 - Focus: Data infrastructure, security
3. Quantitative Analyst
 - Salary: \$120,000+
 - Focus: Financial modeling, risk assessment
4. NLP Engineer
 - Salary: \$110,000+
 - Focus: Natural language processing algorithms



5. Senior Data Scientist

- Salary: \$100,000+
- Experience required: 7+ years
- Focus: Project leadership, advanced analytics

➤ **Essential Skills Framework**

✓ **Technical Skills**

1. Programming Languages
 - Python (primary)
 - R
 - SQL
 - Java/C++ (optional)
2. Statistical Analysis
 - Hypothesis testing
 - Linear regression
 - Time series analysis
3. Machine Learning
 - Algorithm implementation
 - Model training
 - Hyperparameter tuning
4. Data Management
 - Data cleaning
 - Feature engineering
 - Data preprocessing

✓ **Infrastructure Skills**

1. Cloud Computing
 - AWS
 - Azure
 - Google Cloud Platform
2. Big Data Technologies
 - Hadoop
 - Spark
3. Version Control
 - Git
 - GitHub

✓ **Soft Skills**



1. Data Visualization

- Tableau
- Power BI
- Communication skills
- Stakeholder management

5. Career Roadmap

➤ Entry Level

1. Educational Requirements

- Bachelor's degree in relevant field
- 60% aggregate in 10+2 (science stream)
- Starting salary: ₹3.9-6 LPA

✓ Mid-Level (3-5 years)

1. Skill Development

- Advanced ML techniques
- Project management
- Team leadership
- Expected salary: ₹10-15 LPA

✓ Senior Level (7+ years)

1. Leadership Role

- Architecture design
- Strategy development
- Team management
- Expected salary: ₹20+ LPA

➤ Future Outlook

✓ Growth Drivers

1. AI Integration

- Increased demand for AI-ML expertise
- Automation of routine tasks
- New specialized roles emergence

2. Industry Expansion

- Big data analytics market growth
- Cross-industry applications
- Emerging technology integration



➤ **Job Security**

- Consistent demand growth projected
- Essential role in digital transformation
- Evolving skill requirements ensuring relevance

➤ **Recommendations for Aspiring Data Scientists**

1. Focus on foundational skills

- Strong mathematics and statistics
- Programming proficiency
- Data analysis capabilities

2. Continuous Learning

- Stay updated with new technologies
- Pursue relevant certifications
- Engage in practical projects

3. Career Development

- Build a strong portfolio
- Network within the industry
- Seek mentorship opportunities

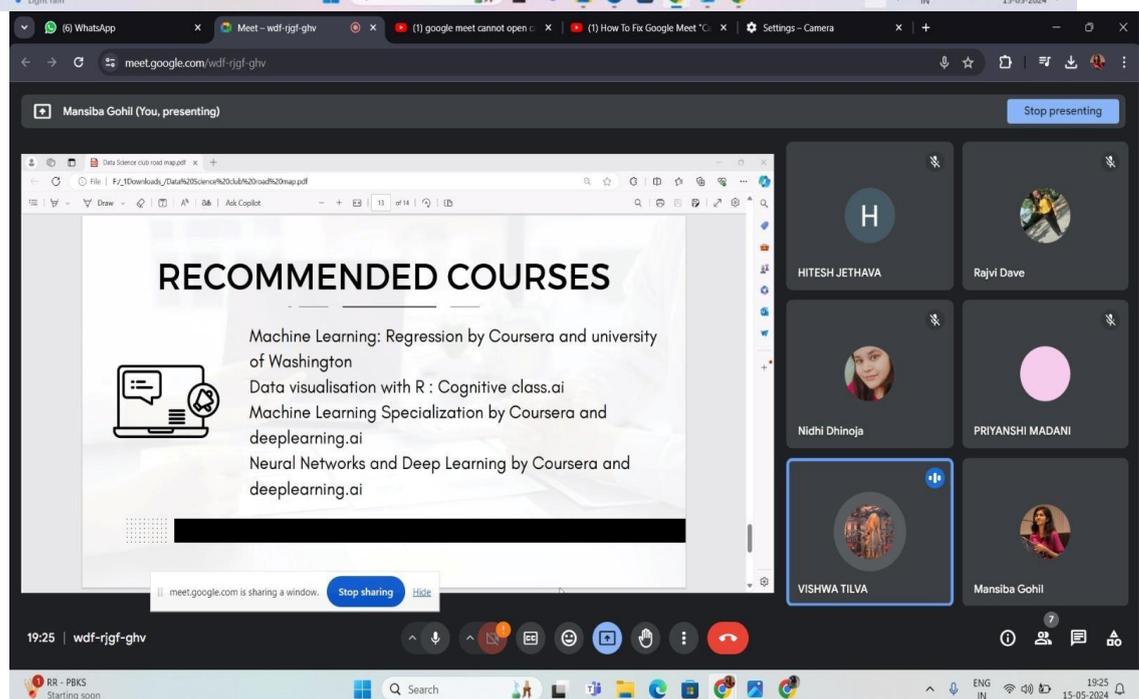
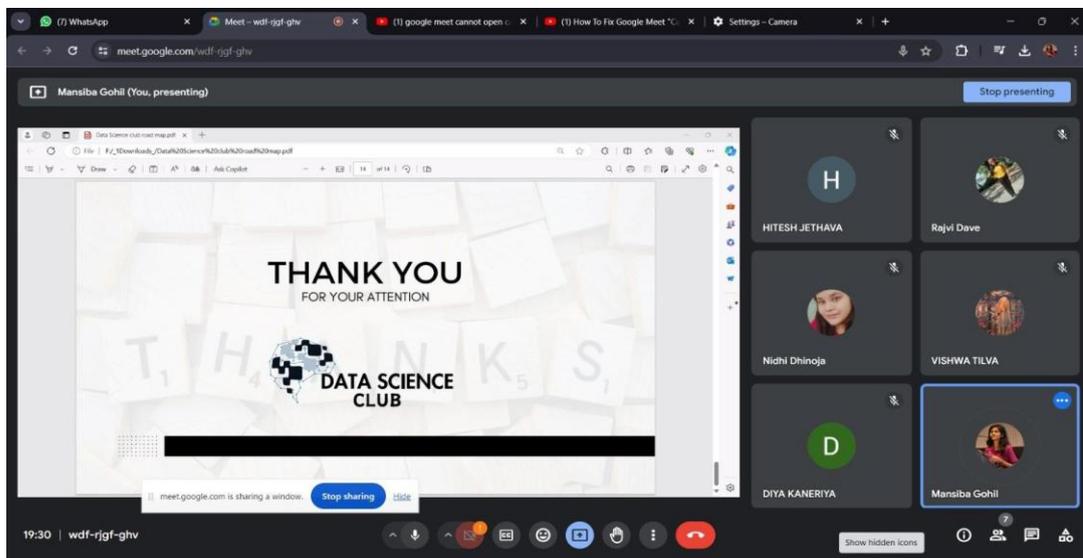
6. Languages and courses Required for Data Science:

- Python Programming
- Database
- Machine learning
- Statistics
- NLP
- Many More

7. Recommended Courses:

- Machine Learning: Regression by Coursera and university of Washington
- Data visualisation with R : Cognitive class.ai
- Machine Learning Specialization by Coursera and deeplearning.ai
- Neural Networks and Deep Learning by Coursera and deeplearning.ai

8. Photos:



List Of Participants:

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Feedback Form:

Marwadi University
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Club Name: Data science club Date: 5/15/2024
Event Name: Scope of data science & careers Roadmap

How would you rate the overall event experience?(Select one)

Poor
 Average
 Good
 Very Good
 Excellent

How satisfied were you with the quality of the speakers/presenters?(Select one)

Highly Satisfied
 Satisfied
 Neutral
 Dissatisfied
 Highly dissatisfied

How satisfied were you with the flow of the event?(Select one)

Highly Satisfied
 Satisfied
 Neutral
 Dissatisfied
 Highly dissatisfied

Was the content relevant to your technical interests and knowledge level?(Select one)

Extremely Relevant
 Slightly Relevant
 Neutral
 Slightly Relevant
 Not relevant at all

Any Other comments that you would like to mention?
It was insightful event so the different path of the data science.

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Extremely Relevant
 Slightly Relevant
 Neutral
 Slightly Relevant
 Not relevant at all

Any Other comments that you would like to mention?
The club has very well work in doing peer-based learning. I wish to come & join the event in the future too.