Group 6 – MIE 1624 Introduction to Data Science and Analytics Final Term Project

Outline

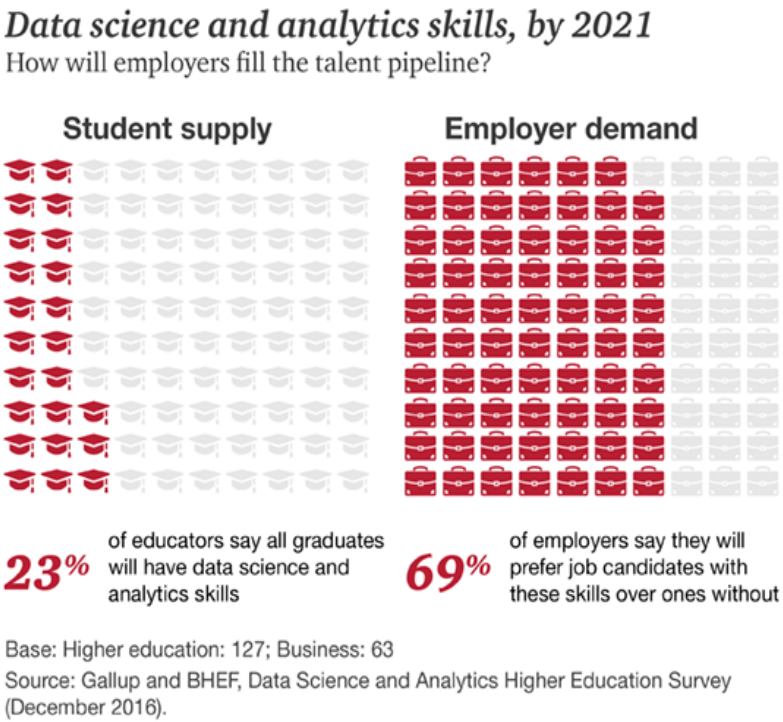
- Job Market Glance
- Data Collection
- Course Curriculum Redesign
- Evaluation of Existing Programs
- Master's Degree Program Design
  - Master of Data Science and Analytics
  - Master of Business and Management in Analytics and AI
- Data Science EdTech Proposal

Job Market Glance

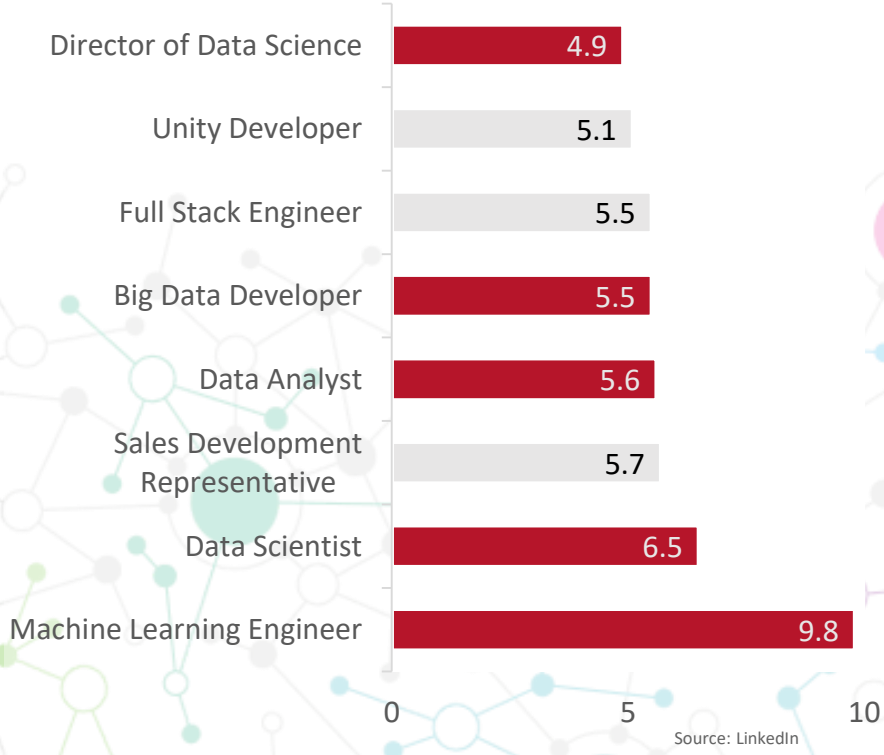
A look into the market trends of Data Scientist and Data Analyst Jobs

Job Market Glance

Demand and Supply

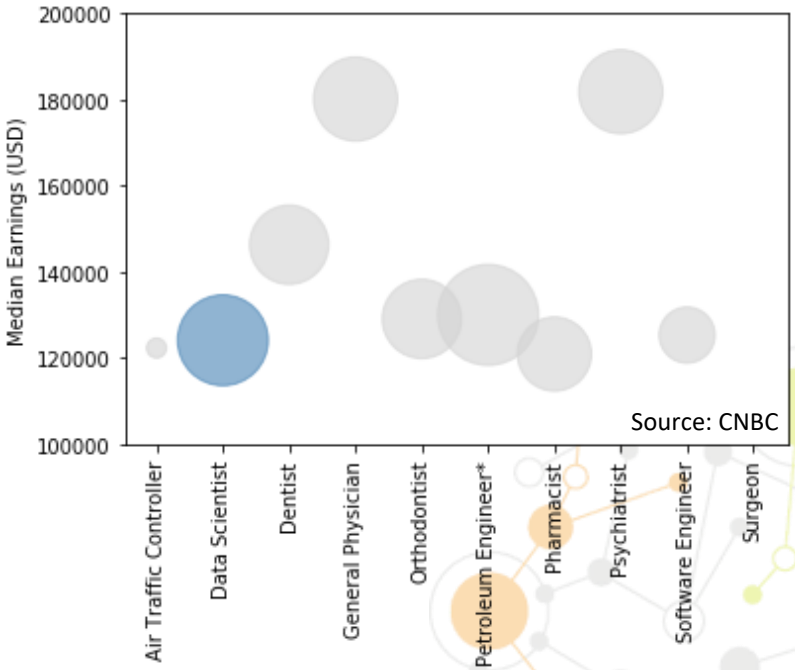


Top Jobs by Job Growth Rate (2012-2017)

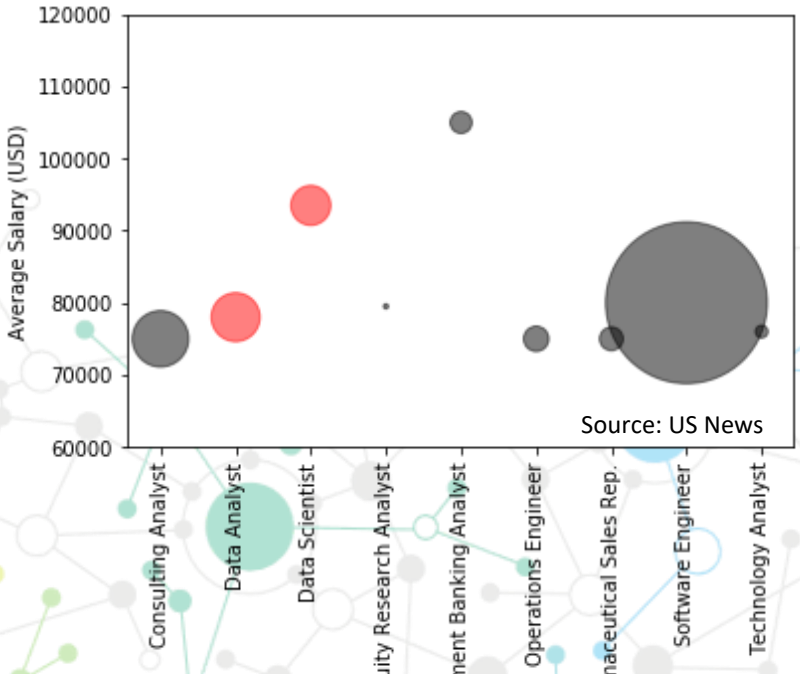


Job Market Glance

Top Jobs by Mid-Career Earnings



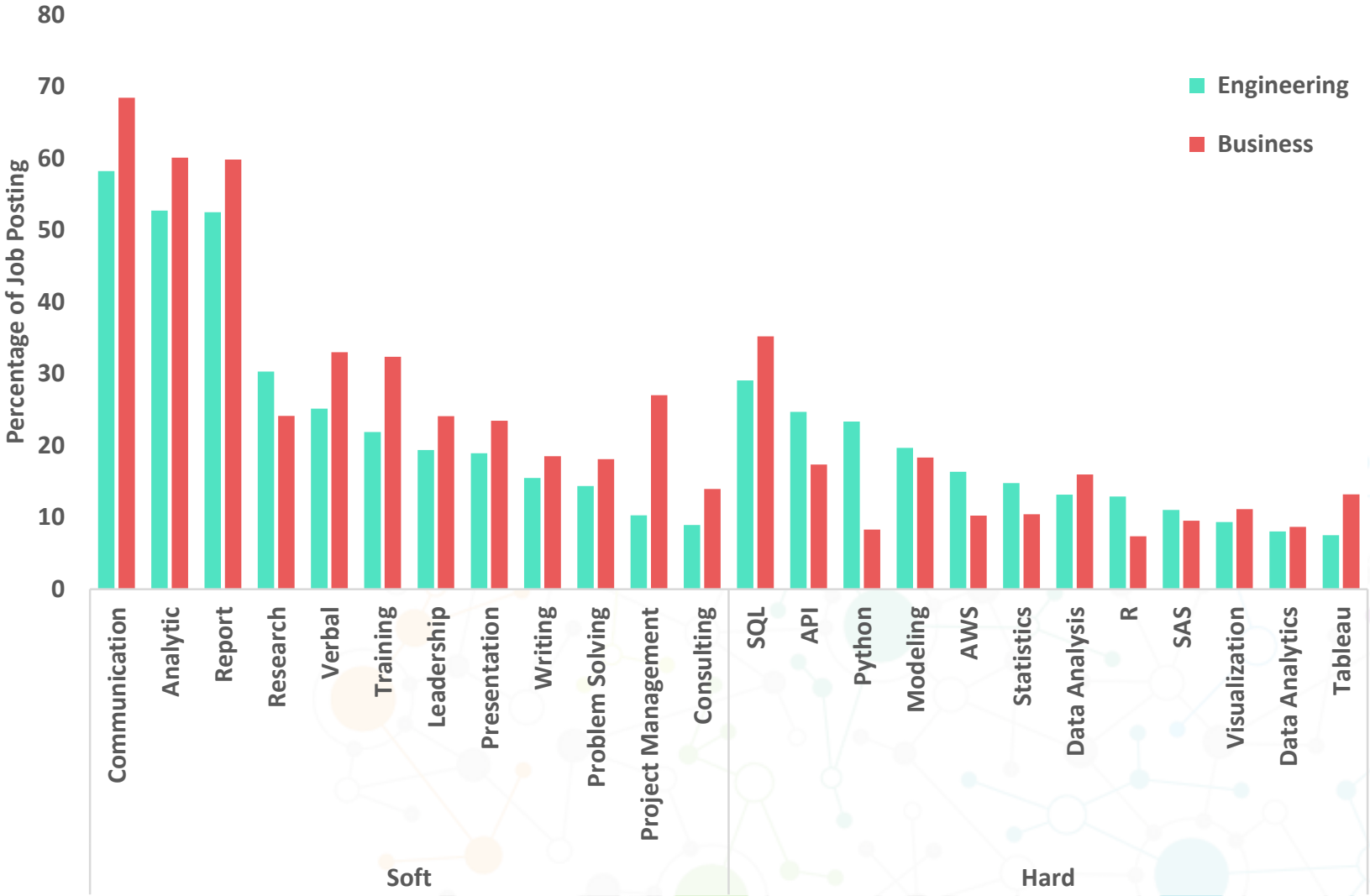
Top Entry Level Jobs by Earnings



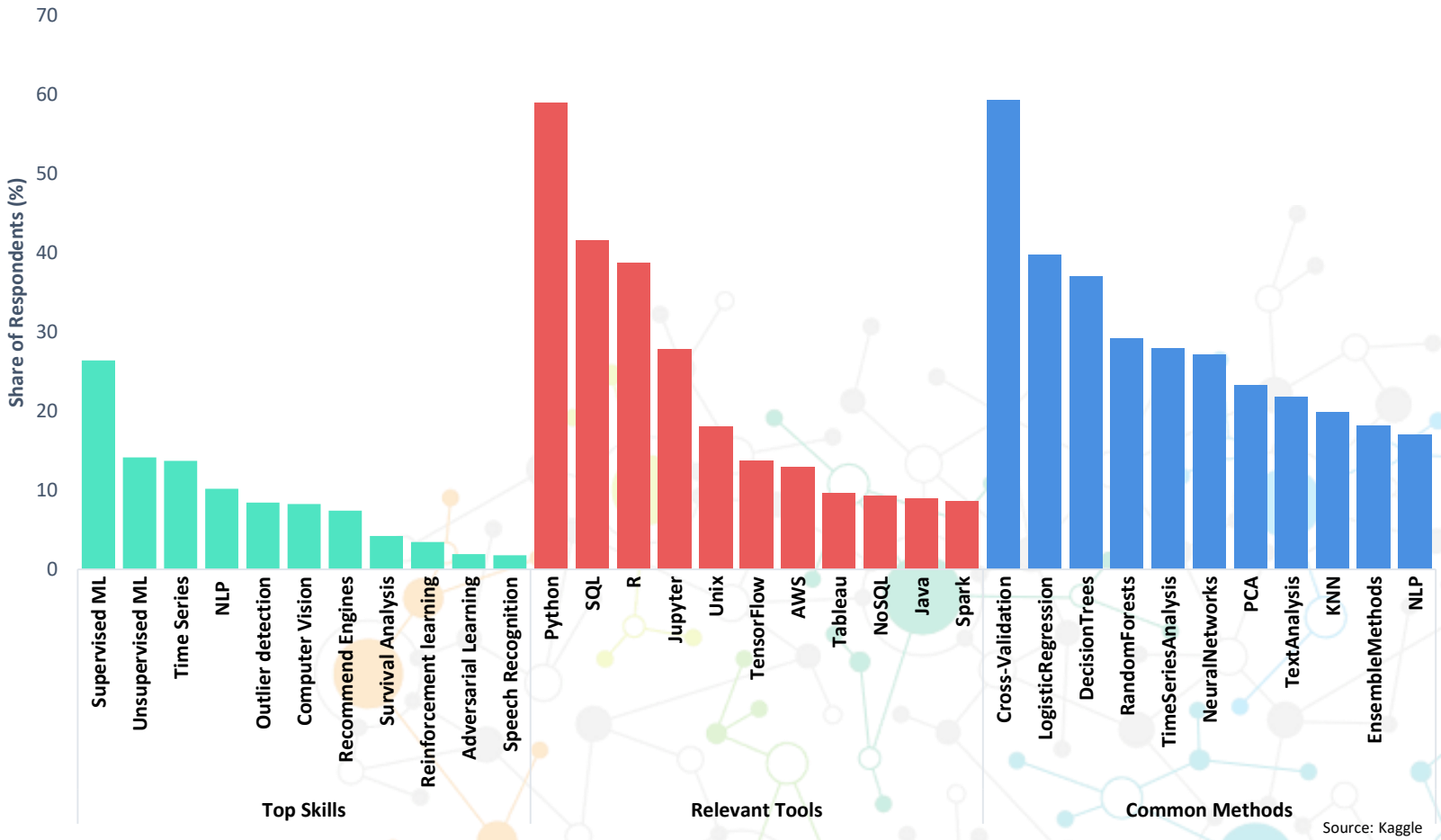
Data Collection

Use of Kaggle and Indeed Datasets

Skill Trends in Recent Job Postings



What's Important in Data Science?



Source: Kaggle

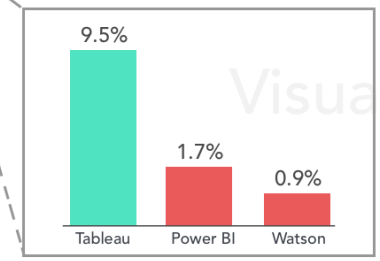
Data Inferences

- Soft skills are extremely vital
- Demand for data science skills is increasing rapidly
- Supply of students with required skills will not meet growing demand
- Most programs are not fully compliant with current work demands
- Programming languages, visualization tools, querying languages form the backbone of technical toolkits
- Top skills require strong knowledge in machine learning

Course Curriculum Redesign

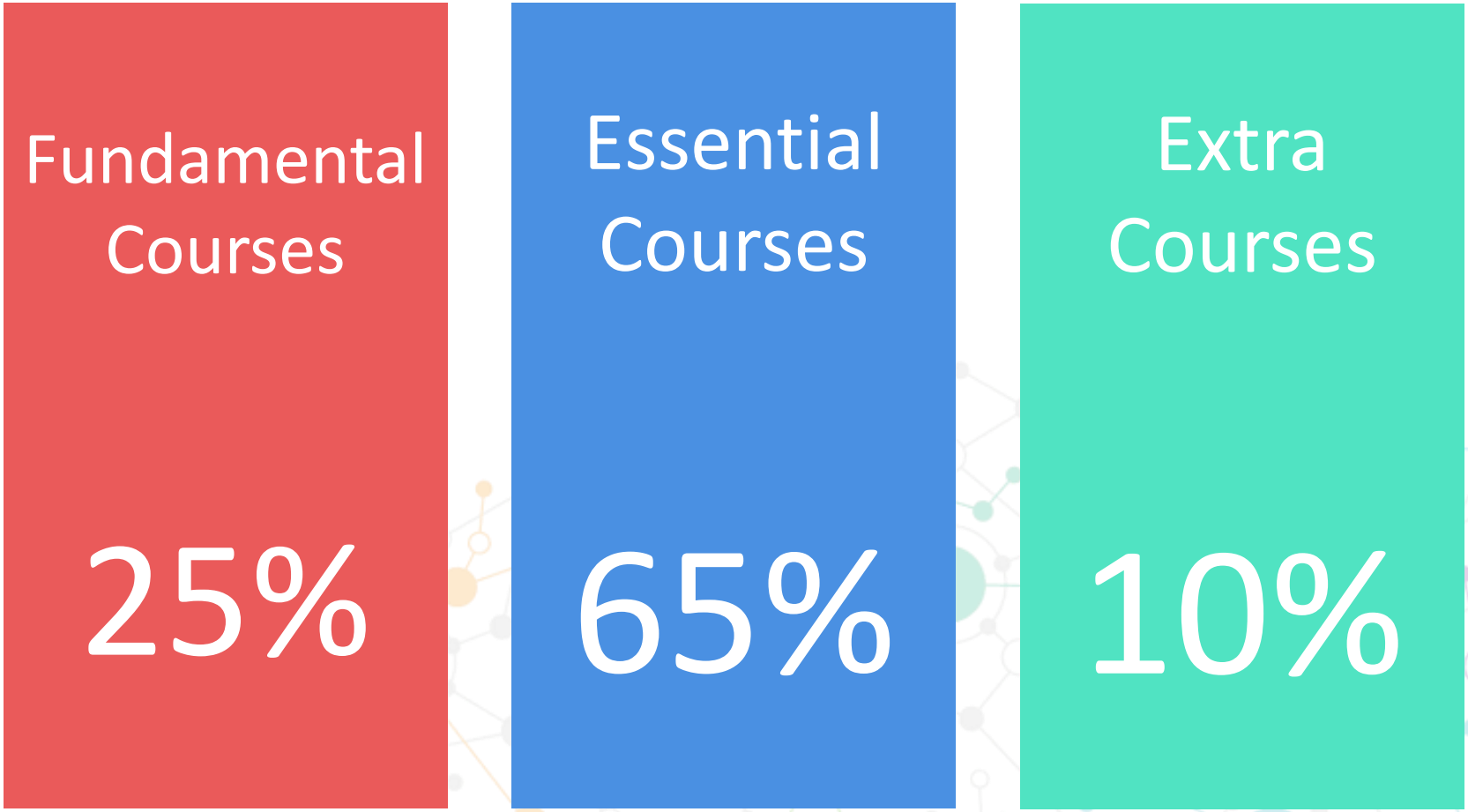
Modifying the current course – Introduction to Data Science and Analytics to cater to current demands.

Introduction to Data Science & Analytics

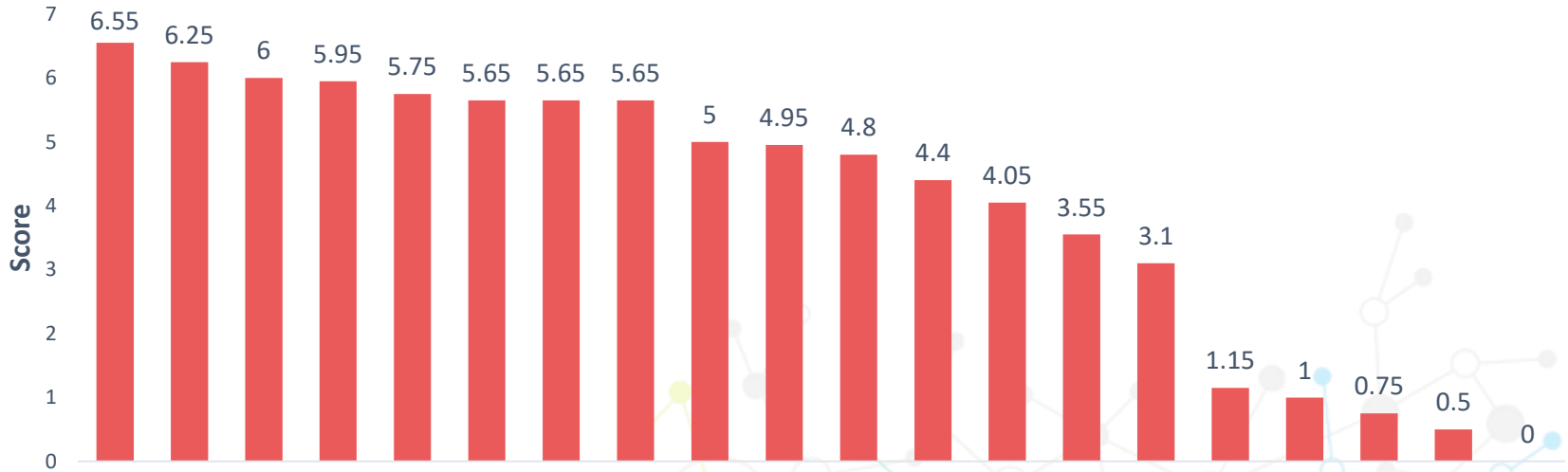
Topics	Skills	Trends
Introduction to Course	Overview, Kaggle, Github, Stack Overflow	Around 35% jobs want working knowlegde of SQL
Programming Basics	Python, Jupyter Notebooks, SQL, Stack Overflow, Pandas, Scikit-Learn	
Visualization & Data Mining	Web Scraping, Seaborn, Tableau, Data Cleaning, Data Exploration	
Statistics & Probablity	Distribution, Bayes Rule	
Linear Algebra & Optimization	Concepts of Machine Learning Models, Optimization	
Machine Learning Algorithms	Training, Prediction, Cross-Validation, Supervised & Unsupervised Learning	Industry research indicates that these tools are prominent in the industry. Advanced techniques are growing and should be recognized by all levels of **data scientist**.
Model Implementation	Optimization, Parameter Tuning	
Advanced Data Science Tools	Spark, Hadoop, Big Data	
Simulation & Sampling	Monte Carlo, Random num Generation	
AI & Deep Learning	Ensemble Methods, Neural Networks, GANs, GBM, etc.	
Assignments	# 1 Beginner Regression Analysis; # 2 Intermediate Sentiment Analysis; # 3 Advanced Classification Analysis	
Course Project	Communication, Team Work, Report, Consulting, Applied Learned Skills	

Evaluation of Current Programs

Program Evaluation Criteria

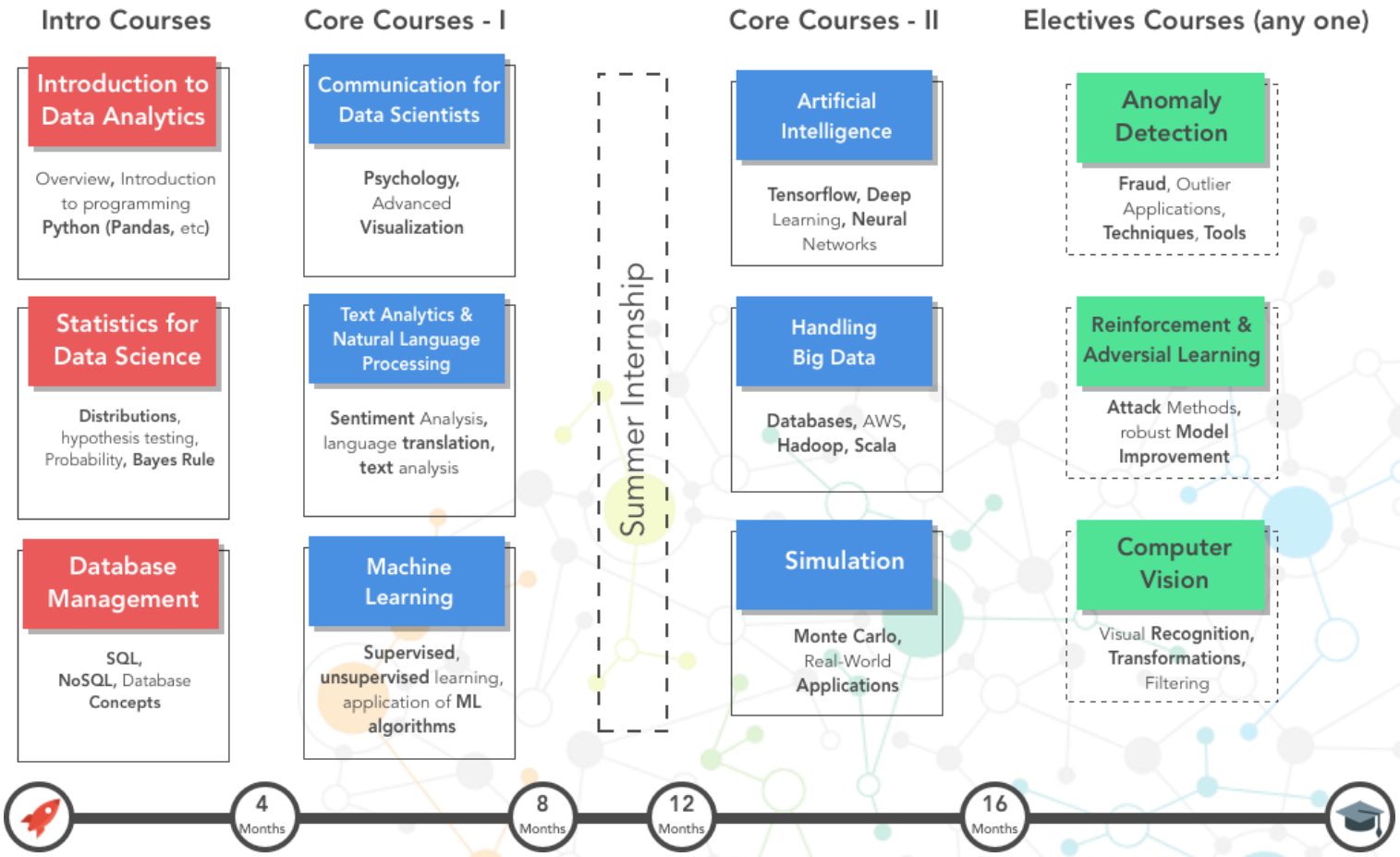


Current Master's Program Evaluations



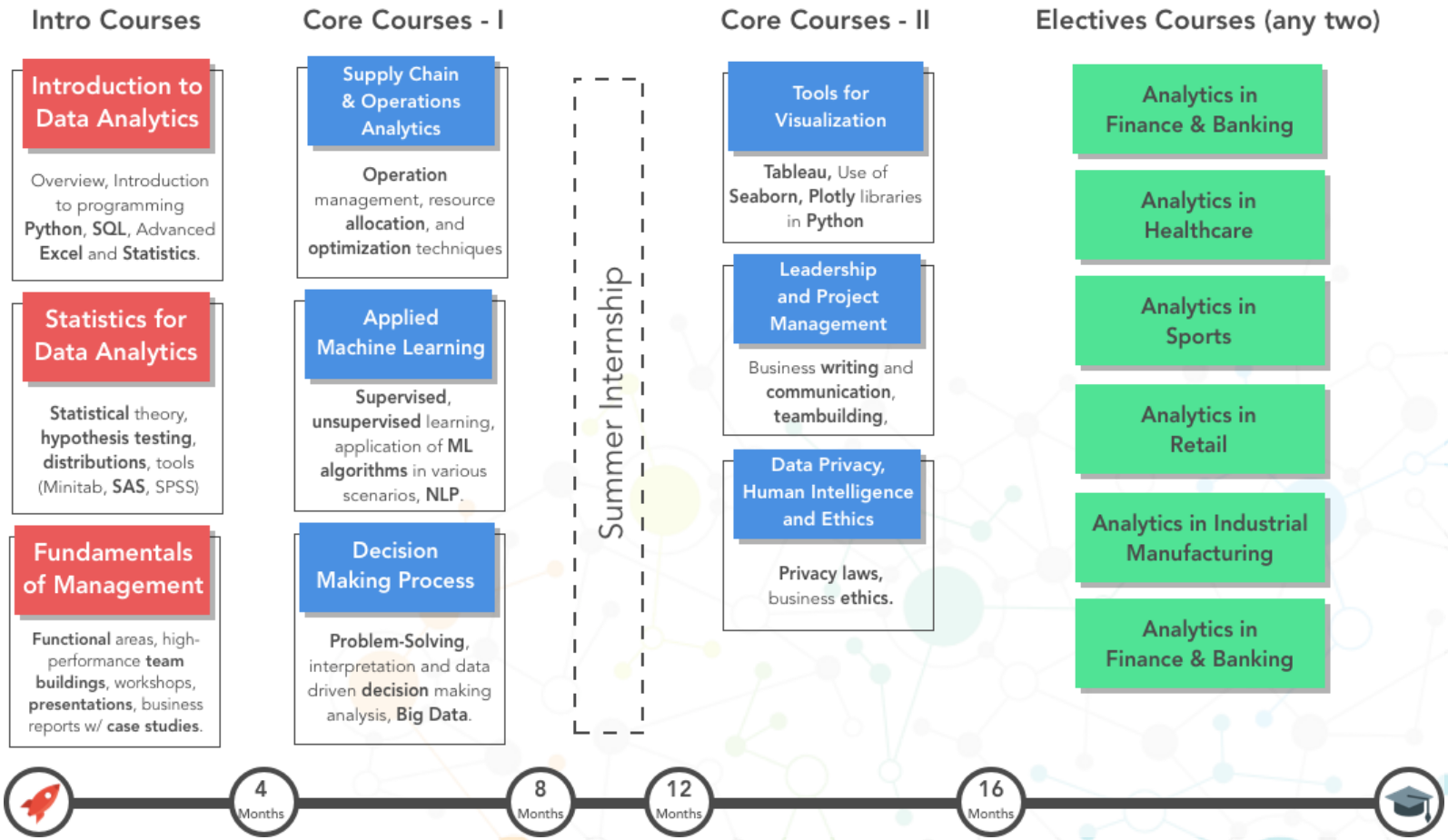
Master of Science – Data Analytics (MSDA)

Program Design - MSDA



Master of Business And Management in Analytics and AI (MBAI)

Program Design - MBAI

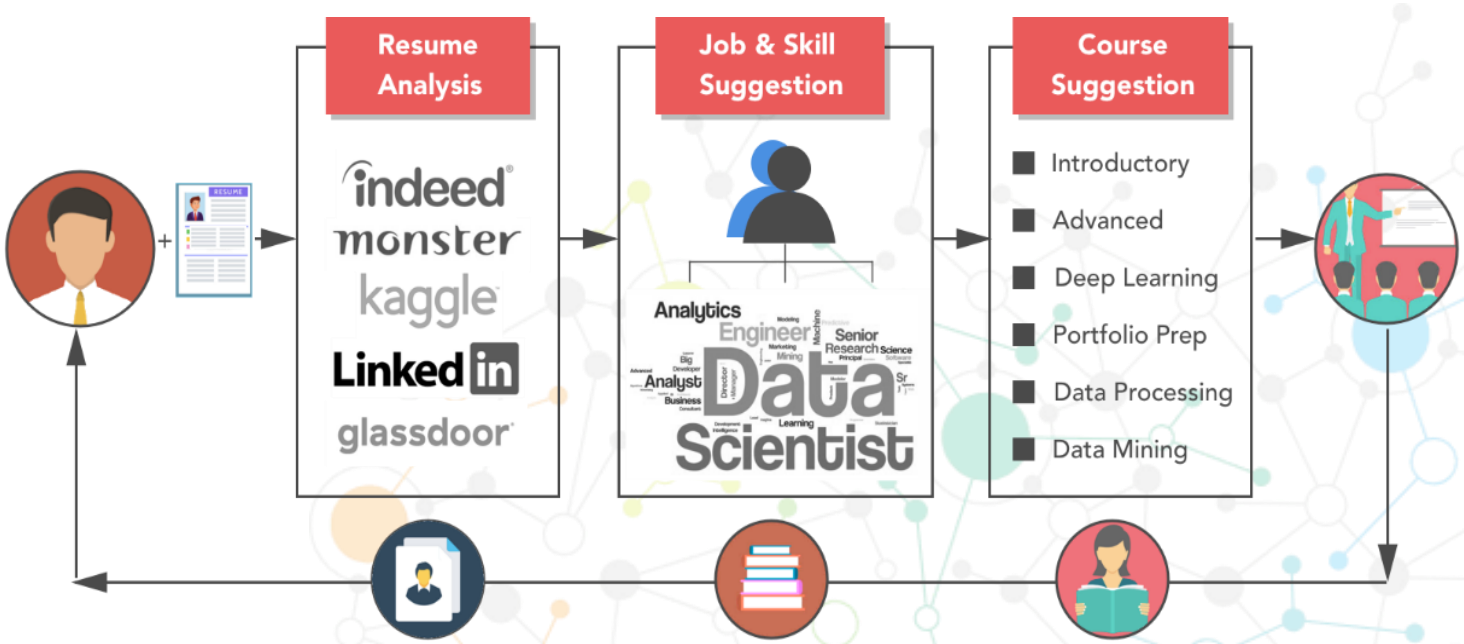


EdTech: D’eXpert

Be a Data Scientist in 4 weeks

D’eXpert – *Be a data scientist in 30 days*

- Prepare and further develop careers of data scientists
- Job skills & Course suggestions based on resume analysis system
- Curated courses with special topics for real-world data analytics problems



QUESTIONS?

Thank You