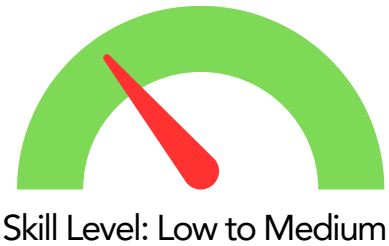
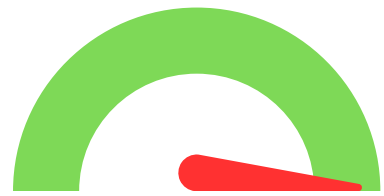
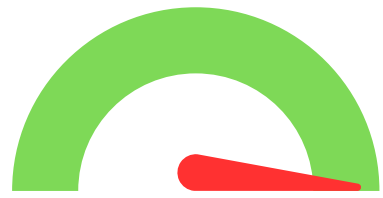
Data Engineer vs Data Scientist vs Business Analyst

	 Programming	 Maths	 Business
Data Engineer	 Skill Level: High	 Skill Level: Low to Medium	 Skill Level: Low to Medium
Data Scientist	 Skill Level: Medium	 Skill Level: High	 Skill Level: Low to Medium
Business Analyst	 Skill Level: Low to Medium	 Skill Level: Low to Medium	 Skill Level: High

Data Engineer

Responsibilities	Skills	Focus
• Develop and maintain scalable data pipelines and infrastructure. • Ensure the integrity, availability, and performance of data systems. • Process raw data into clean, structured formats suitable for analysis. • Work with cross-functional teams to meet data acquisition and management needs.	• Expertise in programming languages such as Python, Java, or Scala. • Proficient in database management systems, both SQL and NoSQL, and data warehousing solutions. • Experience with cloud services (AWS, Azure, GCP) and big data frameworks (Hadoop, Spark). • Solid grasp of data modeling techniques, ETL frameworks, and data governance standards.	• Dedicated to the technical challenges of data handling and processing. • Collaborates with IT and development teams to deliver effective data strategies. • Aims to establish a reliable data foundation for analytical and operational use.

Data Engineer

Career Track

Entry-Level: Begin as a Junior Data Engineer, focusing on learning database concepts, programming, and basic data infrastructure.

Mid-Level: Progress to a Mid-Level Data Engineer, taking on more complex projects and honing skills in data warehousing and big data technologies.

Senior-Level: Advance to a Senior Data Engineer, leading projects and exploring advanced areas like machine learning infrastructure.

Leadership Roles: Move into managerial positions, or specialize further as a Data Architect or transition into a Data Scientist role

Data Scientist

Responsibilities	Skills	Focus
• Interpret complex data sets to identify key insights and patterns. • Design and implement machine learning models to address business challenges. • Perform statistical analyses and hypothesis tests to support conclusions. • Engage with business units to convert objectives into data-centric tasks.	• Strong foundation in statistics, mathematics, and machine learning principles. • Proficiency in data-centric programming languages, notably Python and R. • Competency in data visualization tools (e.g., Matplotlib, Seaborn, Tableau). • Familiarity with cutting-edge analytics methods, including deep learning, NLP, and predictive analytics.	• Concentrates on deriving value and foresight from data. • Partners with business leaders to exploit data for strategic advantage. • Strives to reveal trends and informatics that inform critical business decisions and growth.

Data Scientist

Career Track

Entry-Level: Start as a Data Analyst or Junior Data Scientist, mastering statistical analysis and machine learning basics.

Mid-Level: Grow into a full-fledged Data Scientist, developing predictive models and conducting complex data analyses.

Senior-Level: Become a Senior Data Scientist, overseeing data science projects and mentoring junior team members.

Leadership Roles: Transition into roles such as Chief Data Officer, or specialize in areas like AI and advanced analytics

Business Analyst

Responsibilities	Skills	Focus
• Decode business operations, objectives, and stakeholder needs. • Analyze data to discern patterns, opportunities, and improvement areas. • Craft reports, dashboards, and visualizations to articulate data narratives. • Offer data-backed recommendations to guide business choices.	• Exceptional analytical thinking and problem-solving capabilities. • Proficiency with analytical tools, including Excel, SQL, and BI software. • Strong communication skills and the ability to manage stakeholder relationships. • Industry-specific expertise and understanding of business operations.	• Serves as the conduit between business imperatives and analytical insights. • Facilitates interdepartmental communication to maintain strategic congruence. • Committed to transforming data into practical insights for business strategy and efficiency enhancement.

Business Analyst

Career Track

Entry-Level: Begin as a Junior Business Analyst, learning to understand business processes and data analysis.

Specialized Roles: Move into specialized roles such as Data Analyst, Network Analyst, or Test Analyst.

Senior-Level: Advance to a Senior Business Analyst, taking on larger projects and strategic business initiatives.

Management: Progress into management roles like Project Manager, Portfolio Manager, or Director of Business Intelligence and Analytics