



DEPARTMENT OF DIGITAL ECONOMY AND SYSTEM ANALYSIS

Data scientists are turning into detectives and artists, able to create increasingly accurate images of a person based on the digital trace left behind.

Andreas S. Weigend, writer, «Data for the People»

English speaking master's program

INFORMATION TECHNOLOGIES AND BUSINESS ANALYTICS (DATA SCIENCE)

Disciplines of professional orientation:

- Big Data Analytics
- Design of Recommendation Systems
- English for Data Analytics
- Intelligent Systems
- Knowledge Management
- System Analysis of Complex Economic Systems under Uncertainty


The main learning outcomes:

- To create and research the models of complex systems and processes using the methods of system analysis, mathematical, computer and information modeling.
- To apply the methods of machine learning and data mining, mathematical tools of fuzzy logic and artificial intelligence to solve complex problems of system analysis.
- To develop intelligent systems in conditions of poorly structured data.
- To develop and apply models, methods and algorithms for the forecasting and decision-making in conditions of conflict, fuzzy information, uncertainty and risk.
- To develop data and knowledge management models in complex systems.
- To perform intelligent analysis and Big Data processing by means of computer modeling.

Who is a Data Scientist?

MODERN DATA SCIENTIST

Data Scientist, the sexiest job of 21st century requires a mixture of multidisciplinary skills ranging from an intersection of mathematics, statistics, computer science, communication and business. Finding a data scientist is hard. Finding people who understand who a data scientist is, is equally hard. So here is a little cheat sheet on who the modern data scientist really is.



MATH & STATISTICS

- ☆ Machine learning
- ☆ Statistical modeling
- ☆ Experiment design
- ☆ Bayesian inference
- ☆ Supervised learning: decision trees, random forests, logistic regression
- ☆ Unsupervised learning: clustering, dimensionality reduction
- ☆ Optimization: gradient descent and variants

PROGRAMMING & DATABASE

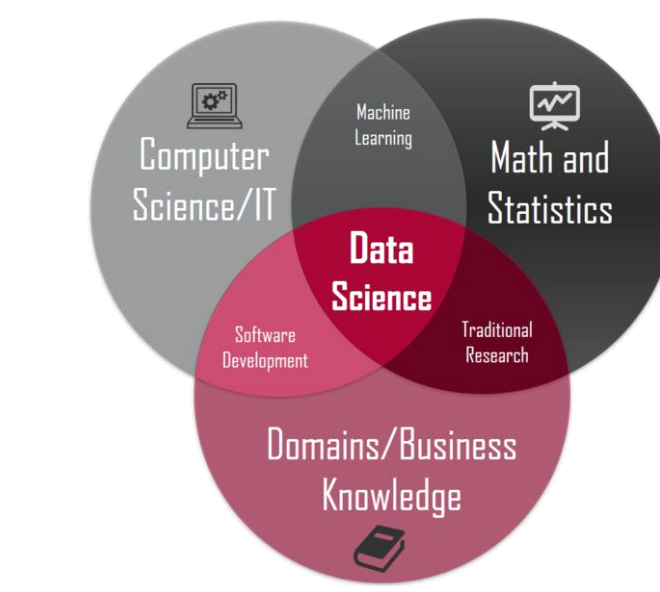
- ☆ Computer science fundamentals
- ☆ Scripting language e.g. Python
- ☆ Statistical computing package e.g. R
- ☆ Databases SQL and NoSQL
- ☆ Relational algebra
- ☆ Parallel databases and parallel query processing
- ☆ MapReduce concepts
- ☆ Hadoop and Hive/Pig
- ☆ Custom reducers
- ☆ Experience with xaaS like AWS

DOMAIN KNOWLEDGE & SOFT SKILLS

- ☆ Passionate about the business
- ☆ Curious about data
- ☆ Influence without authority
- ☆ Hacker mindset
- ☆ Problem solver
- ☆ Strategic, proactive, creative, innovative and collaborative

COMMUNICATION & VISUALIZATION

- ☆ Able to engage with senior management
- ☆ Story telling skills
- ☆ Translate data driven insights into decisions and actions
- ☆ Visual art design
- ☆ R packages like ggplot or lattice
- ☆ Knowledge of any of visualization tools e.g. Flare, D3.js, Tableau



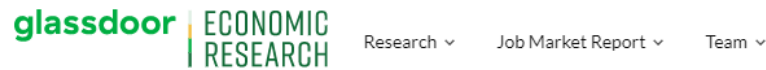
Data Science is an interdisciplinary field of scientific methods, processes and systems related to the mining of knowledge from data in various forms.

Data Science technologies make it possible to turn data into information and then information into knowledge.

Data Scientist is not a programmer. This person is a specialist with excellent cross-disciplinary knowledge of mathematics, artificial intelligence, information technology and business and super-analytical skills.

Why is a Data Scientist exactly?

According to the most authoritative website Glassdoor, which annually publishes the most relevant professions, experts in the field of data analysis for 5 years in a row are among the leaders of the ranking



Top 10 Best Jobs in America for 2021

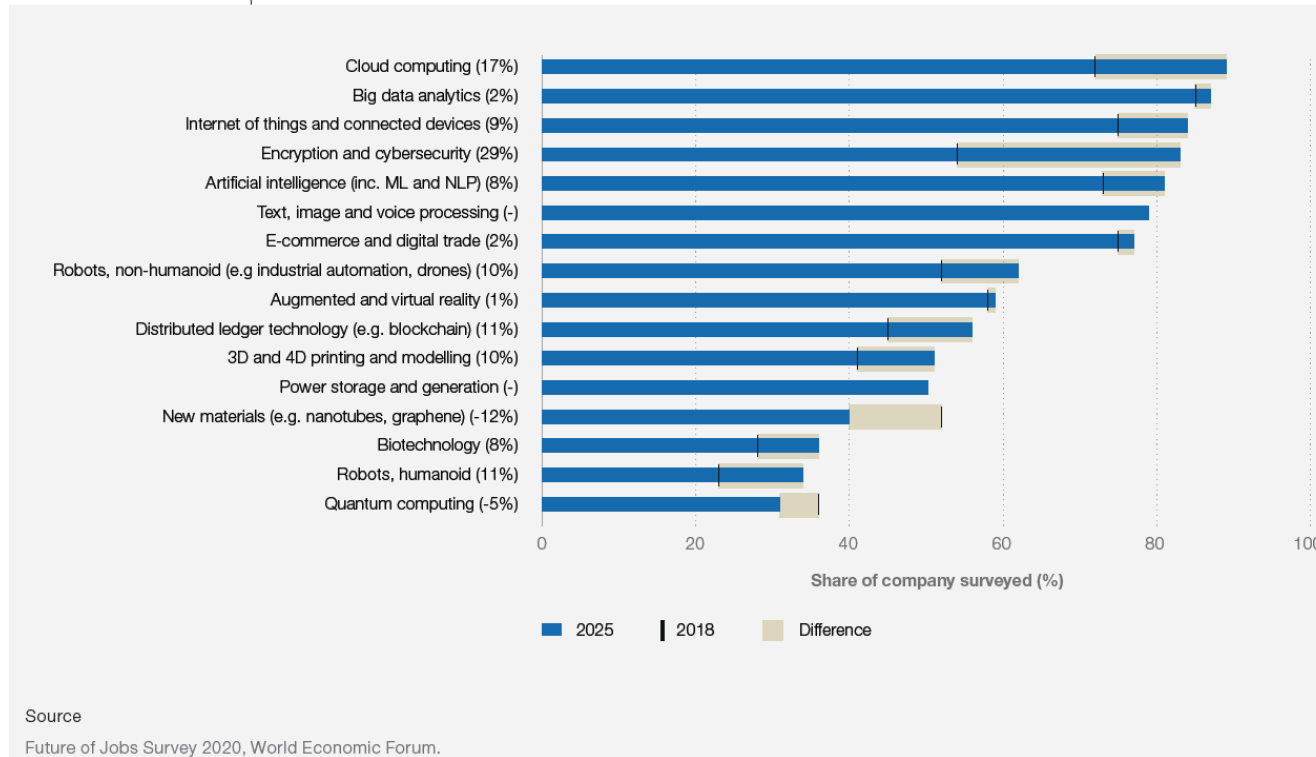
Rank	Job Title	Median Base Salary	Job Satisfaction	Job Openings
1	Java Developer	\$90,830	4.2	10,103
2	Data Scientist	\$113,736	4.1	5,971
3	Product Manager	\$121,107	3.9	14,515
4	Enterprise Architect	\$131,361	4.0	10,069
5	Devops Engineer	\$110,003	4.0	6,904
6	Information Security Engineer	\$110,000	4.0	5,621
7	Business Development Manager	\$82,182	4.1	8,827
8	Mobile Engineer	\$94,301	4.1	4,631
9	Software Engineer	\$110,245	3.8	40,564
10	Dentist	\$134,122	4.0	4,315

Source: Glassdoor Economic Research (Glassdoor.com/research)



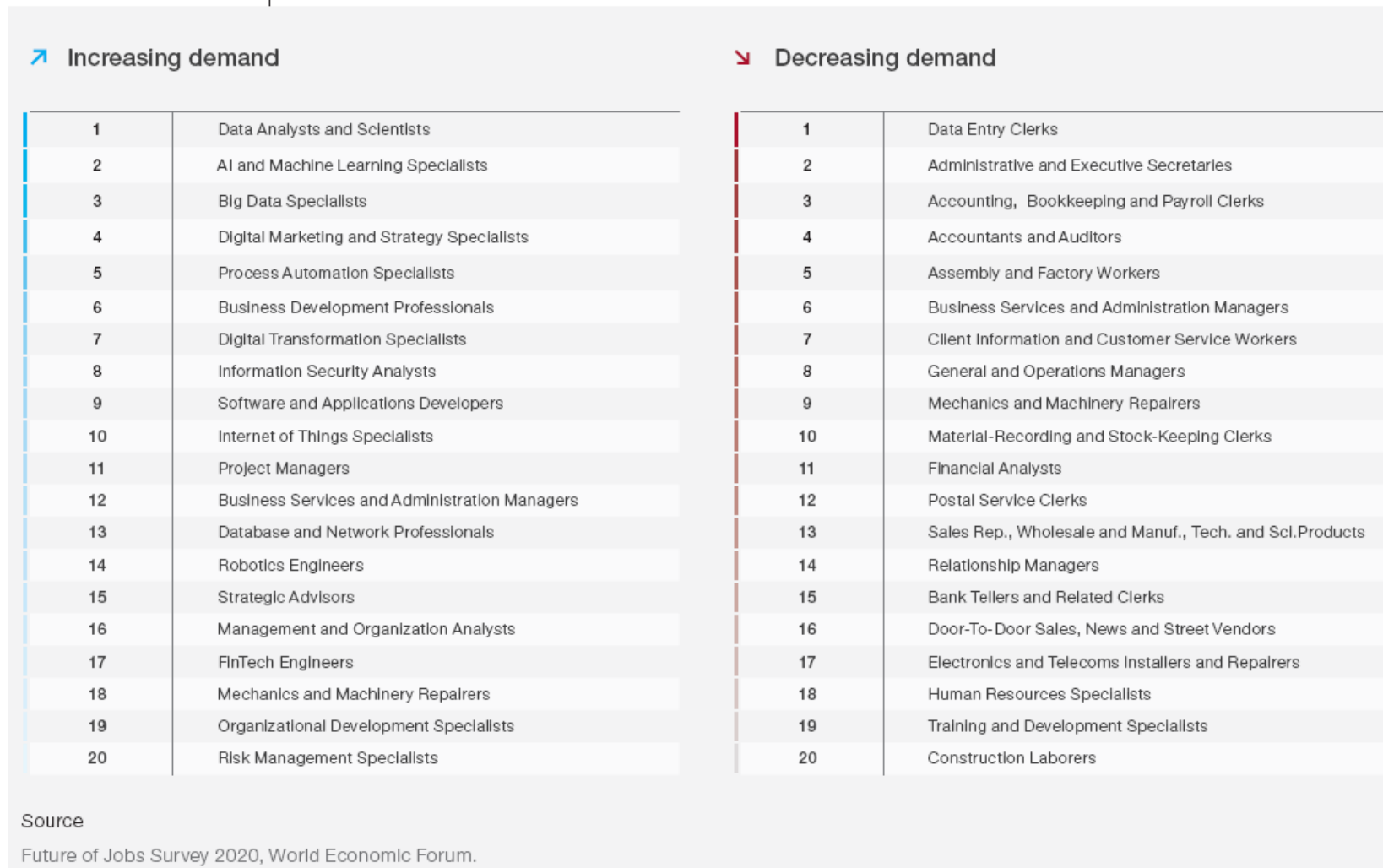
According to the latest report of the World Economic Forum in 2025, 90% of companies in the world will need, first of all, the specialists in data analysis.

FIGURE 18 | Technologies likely to be adopted by 2025 (by share of companies surveyed)



Specialists in the Data analysis have the greatest increase demand of job roles among the future of jobs.

FIGURE 22 | Top 20 job roles in increasing and decreasing demand across industries



What do we offer

- Strong career opportunities and good competitiveness on the job market in any activity sphere
- Improvement of your knowledge of English and mastering the special terms of Data Science
- Problem-oriented and interactive studying methods by using modern educational technologies
- Modern IT-laboratories, including the new special computer laboratory of Business Analytics
- Highly qualified scientific and teaching staff with practical experience in the field of Data Analytics
- Possibility of parallel studies in the joint Ukrainian-Slovak master's program «International Business Analytics».

What job you will be able to get

- Business Analyst
- Computer Data Bank Analyst
- Consolidated Information Analyst
- Data Administrator
- Professional in project and program management
- Researcher-consultant (computer systems)
- Researcher-consultant (information analytics)
- System Analyst

