Fundamentals of Data Science

Introduction: Core Concepts and Technologies

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The Data Science toolkit

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Technologies and tools

Programming languages

R, Python, Java, JavaScript

Big data processing

Hadoop, HDFS, MapReduce, Spark, Storm, Hive, Pig

Data management

SQL, NoSQL, Mongo DB, Cassandra

Visualisation

D3.js, Gephi, Tableau, Shiny, Excel, Gapminder

Data analysis

R, Excel, Weka, RapidMiner, OpenRefine, SAS, SPSS, Watson Analytics, Open Calais, Matlab

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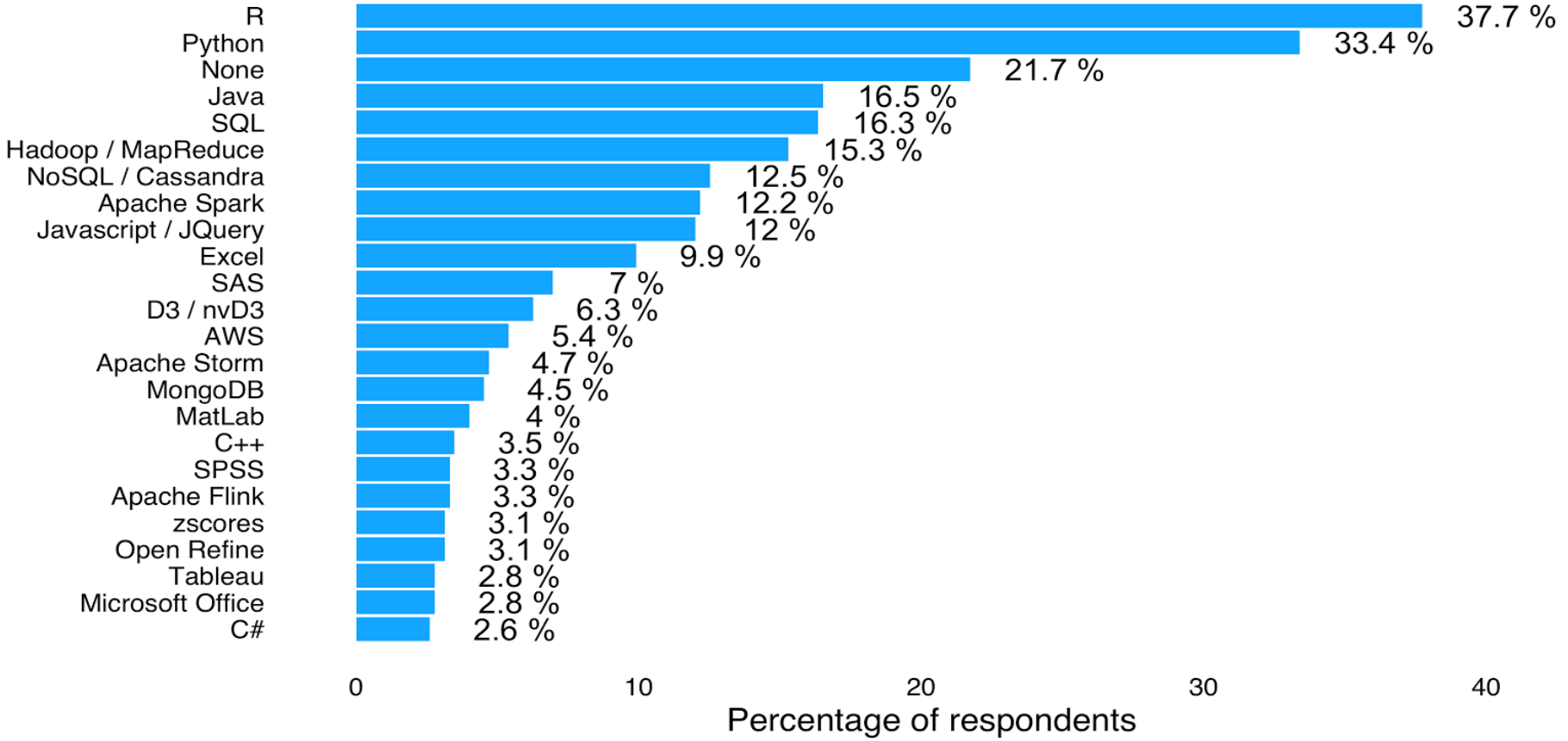

What tools should be taught or covered on data science courses?

Results from the European Data Science Academy's study of 693 data science practitioners and managers across all EU member states.

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Choosing a tool

The use of each tool or technology depends on:

- type of data
- scale
- application scenario
- best practices
- etc

There is no "one size fits all" solution

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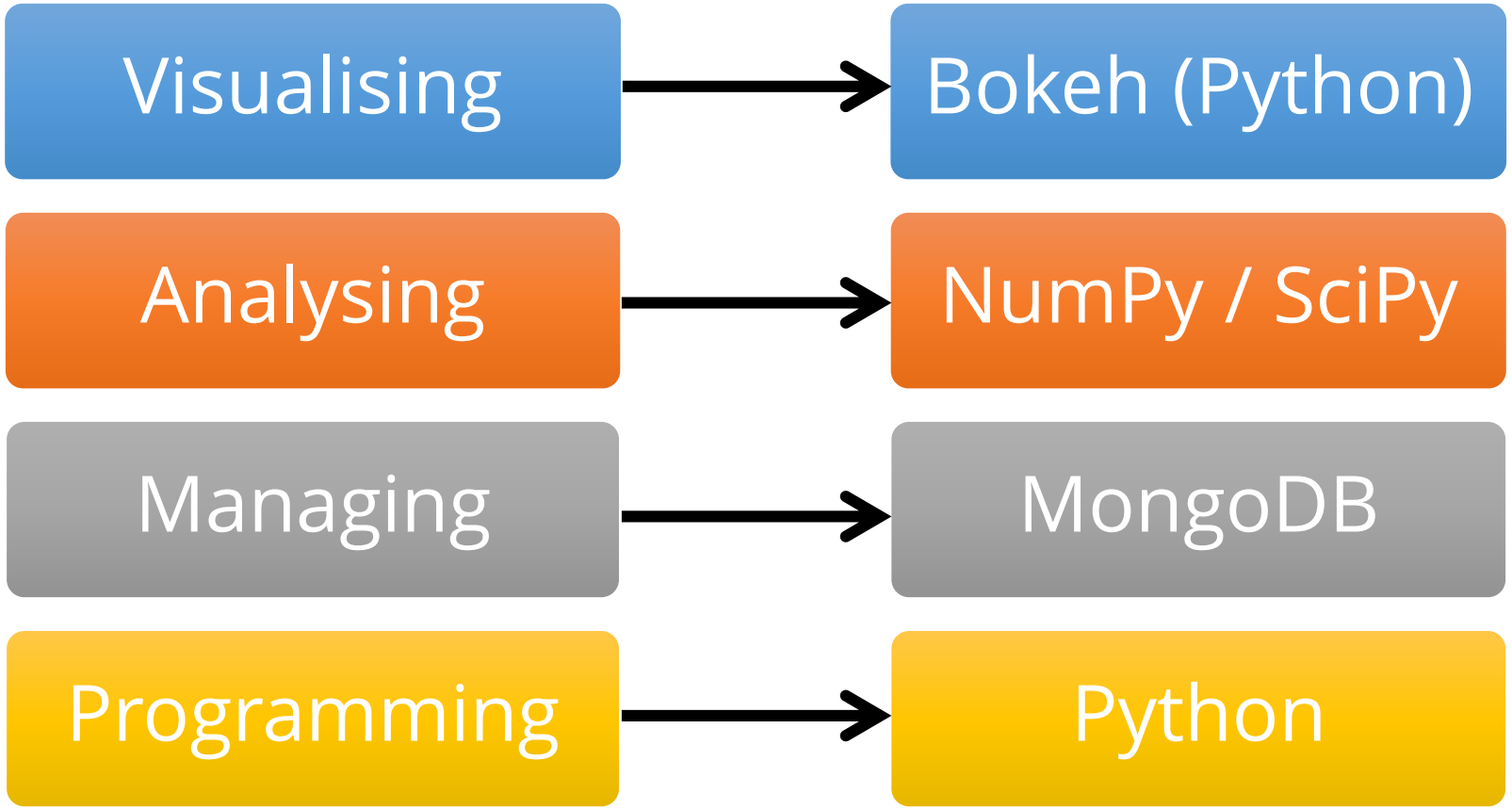
Toolkit on this course



Python

- Python (as with R) is one of the most popular languages in data science jobs
- flexible language that is quick to get started with
- libraries for doing various parts of the data science process
  - Eg Bokeh for visualisation

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