Laurea magistrale in Computer Science

curriculum

Data & Knowledge: Science & Technologies

Dino Pedreschi
Da Vinci

Date of birth: April 15, 1452
Date of death: May 2, 1519
(age 67 years)

Mona Lisa

Michelangelo
a tool to measure, understand, and possibly predict human behavior
Data scientist

- A new kind of professional has emerged, the **data scientist**, who combines the skills of **software developer**, **statistician** and **storyteller/artist** to extract the nuggets of gold hidden under mountains of data.
The Future of Jobs

Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution

January 2016

New and Emerging Roles

Our research also explicitly asked respondents about new and emerging job categories and functions that they expect to become critically important to their industry by the year 2020, and where within their global operations they would expect to locate such roles.

Two job types stand out due to the frequency and consistency with which they were mentioned across practically all industries and geographies. The first are data analysts, as already frequently mentioned above, which companies expect will help them make sense and derive insights from the torrent of data generated by the technological disruptions referenced above. The second
Jobs Rated Report 2017: Ranking 200 Jobs

Data Scientist

**Overall Rating:** 5/199

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Environment</td>
<td>Very Good</td>
<td>12/199</td>
</tr>
<tr>
<td>Stress</td>
<td>Very Low</td>
<td>37/199</td>
</tr>
<tr>
<td>Projected Growth</td>
<td>Very Good</td>
<td>37/199</td>
</tr>
</tbody>
</table>

**Median Salary:** $111,267

View Raw Scores

Search Data Scientist Jobs
The 10 Toughest Jobs To Fill In 2016

Launch Gallery
10 images
Data Scientist
Goal: data science architects

• create the next generation of “data architects” and “software and algorithm engineers”
  – deep computational, methodological and modeling skills to design and implement the future data-intensive algorithms, tools and platforms,
  – master cutting-edge technologies for big-data analytics, such as Hadoop, Spark, together with the tools for data and text mining, machine learning, complex system modeling
## Study plan

### First year

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>CFU</th>
<th>Semester 2</th>
<th>CFU</th>
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<tbody>
<tr>
<td>Algorithm engineering</td>
<td>9</td>
<td>Advanced databases</td>
<td>9</td>
</tr>
<tr>
<td>Data Mining</td>
<td>9</td>
<td>Bioinformatics</td>
<td>6</td>
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<tr>
<td>Information Retrieval</td>
<td>6</td>
<td>Parallel and distributed systems: paradigms and models</td>
<td>9</td>
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<tr>
<td>Computational mathematics for learning and data analysis</td>
<td>9</td>
<td><strong>Group: KD elective 6 cfu</strong></td>
<td>6</td>
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<tr>
<td></td>
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<td><strong>Total</strong>:</td>
<td><strong>30</strong></td>
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### Second year

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>CFU</th>
<th>Semester 4</th>
<th>CFU</th>
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</thead>
<tbody>
<tr>
<td><strong>Group: free choice</strong></td>
<td>9</td>
<td>Thesis</td>
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<td><strong>Group: KD elective 9 cfu</strong></td>
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<td><strong>Total</strong>:</td>
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</tbody>
</table>

### Group: KD electives (9 CFU)

- Human languages technologies (AI)
- ICT risk assessment (ICT)
- Mobile and cyber physical systems (ICT)
- Machine learning (AI)

### Group: KD electives (6 CFU)

- Big data analytics (WBI)
- ICT infrastructures (ICT)
- Peer to peer systems and blockchains (ICT)
- Scientific and large data visualization (CNR)
- Social and ethical issues in computer technology