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Collector: Web Link 1 (Web Link)
Started: Wednesday, February 01, 2017 11:08:19 AM
Last Modified: Wednesday, February 01, 2017 11:35:23 AM
Time Spent: 00:27:03
IP Address: 178.199.151.123

PAGE 2: Help us in understanding your background and experience

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Q1: What is your educational background?   MASTER OR EQUIVALENT LEVEL: Academic

Q2: What is your educational discipline?   Science: Computing

Q3: What is your current sector of work?   Academic Research

Q4: What is your current job profile?

	Data Science (EDISON Data Science Framework)	ICT (European e-Competence Framework)
Job profiles:	Data Analyst	Project Manager

Q5: **What is the level of knowledge you have in the following Data Science Knowledge Areas?(see EDISON Data Science Body of Knowledge here for details)0: No experience 1: General knowledge about the topics2: General knowledge plus practical experience 3: Advanced theoretical knowledge 4: Advanced theoretical knowledge plus practical experience**

Theory of computation	1
Mathematics of computing	2
Computing methodologies	3
Information systems (to support Data Science applications)	4
Big Data Technologies and Systems	3
Computer systems organisation for Big Data applications (including high performance networks)	3
Big Data software organisation and engineering	2
Modelling and simulation	1
Big Data systems organisation and management	2
Big Data (Data Science) applications design	1
Infrastructure and platforms for Data Science applications	1
Software engineering and management	1
Data management systems	1
Digital libraries and archives	3
Data Management and Enterprise data infrastructure	1
General Concepts in Data Management and organization	2
Scientific/Research Methods	3
Business Process Management	1
Business Analysis organisation and management	1
Business analysis and enterprise organisation	1

PAGE 3: Help us in identifying your working environment

Q6: **What type of institution do you work for?**	European or International Research center
Q7: **What is the approximate size of the institution you are working for?**	More than 1000
Q8: **Which one of the following statements best describes the Human Resources (HR) procedure at the institution you are working for?**	Existing HR procedures, based on customisation of external frameworks
Q9: **How many of the people in your organisation could be categorised as Data Scientists?**	More than 150

Q10: How many open positions for data scientists are currently available within the institution you are working for?

Less than 10

Q11: Please provide an estimate of the growth of the demand for data scientists within the institution you are working for?

Next year	Less than 10
In three years	Between 10-50
In five years	Between 10-50

Q12: Please indicate on which platforms jobs positions are posted and how potential candidates are recruited. (Multiple answers are possible)

Company web site ,

Specialised social media (LinkedIn, IEEE jobs, ACM jobs, …)
,

Sectorial publications or journals ,

Online publications or sectorial websites ,

Colleagues or word-of-mouth

PAGE 4: Help us in understanding the working environment of a Data Scientist

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Q13: Which of the following statements describe the position of a Data Scientist in the organigram of your institution?(Multiple answers are possible)

S/he reports to the middle-level management of the institution
,

S/he interacts directly with the customer(s) ,

S/he supports other units as a consultant ,

S/he provides services or consultancy on demand (to other units or to customers)
,

S/he is engaged on a product or long term goals ,

Other (please specify)
S/he works in large teams, analysing data and comparing results with other relevant teams.

Q14: **Which of the following activities is more pertinent to the data scientists in your institution?(Multiple answers are possible)**

Data Identification and creation,

Data access and retrieval, Data cleansing,

Data processing, Data preservation and curation,

Data Analysis,

Data Visualisation and Communication,

General decision support solutions and applications ,

Data handling applications development,

Data protection,

Data infrastructure: platforms and tools,

Data Infrastructure applications management and operation
,
Other (please specify)
Data transfer algorithms and Data monitoring (access to storage, transfer performance etc)

PAGE 5: Training of the Data Scientist at the respondent institution

Q15: **Please indicate what type of education or training is required/optional/beneficial for the Data scientist role at your institution or beneficial to have based on your experience:**

On-the-job training	Required
Scientific degree (PhD)	Beneficial
University master	Required
University bachelor/engineer	Required
Online general or special courses	Optional
Self-training online (MOOC, Coursera, Udacity, etc)	Beneficial
Internal (to the institution) courses	Required

Q16: **What type of training for Data Scientists is offered at your institution?(Multiple answers are possible)**

Courses done by internal staff ,

Courses done by external experts

Q17: **What types of training are requested for Data Scientists in your organisation?(Multiple answers are possible)**

Technology courses, Short-term courses,

On-the-job training, Courses leading to certifications

Q18: **What content type is most likely to be considered in training activities?(Multiple answers are possible)**

Domain specific technologies, methodologies or techniques
,
About methods and techniques (domain independend)

PAGE 6: Data Analytics skills and competencies for the data science profession

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Q19: What are the competences and skills a data scientist should have in the field of data analytics?(See the EDISON Data Science Competence Framework here for details.)0: Not relevant1: The topic is relevant but I cannot judge the level of expertise2: General knowledge about the topics3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience

Use predictive analytics to analyse big data and discover new relations	2
Use appropriate statistical techniques on available data to deliver insights	3
Develop specialized analytics to enable agile decision making	3
Research and analyze complex data sets, combine different sources and types of data to improve analysis	5
Use different data analytics platforms to process complex data	5
Visualise complex and variable data	5
Q20: If applicable, please elaborate on other data analytics skills:	*Respondent skipped this question*

PAGE 7: Data Management and Curation skills and competencies for the data science profession

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Q21: What are the competences and skills a data scientist should have in the field of data management and curation:0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience

Develop and implement a data strategy, in particular in the form of a Data Management Plan (DMP)	3
Develop and implement data models including metadata	3
Integrate different data sources and provide them for further analysis	2
Develop and maintain a historical data repository of analysis results (data provenance)	3
Ensure data quality, accessibility, publications (data curation)	3
Manage IPR and ethical issues in data management	2
Q22: If applicable, please elaborate on other skills on data management and curation:	*Respondent skipped this question*

PAGE 8: Data Science Engineering skills and competencies for the data science profession

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Q23: **What are the competences/skills data scientists should have in the field of Data Science Engineering?0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience**

Use engineering principles to design or develop structures, instruments, experiments, processes, systems	3
Develop and apply computational solutions to domain related problems using data analytics platforms	3
Develop specialized data analysis tools to support executive decision making	3
Design, build, operate relational non-relational databases	3
Develop solutions for secure and reliable data access	3
Prototype new data analytics applications	3

Q24: if applicable, please elaborate on other skills on data science engineering:	*Respondent skipped this question*

PAGE 9: Research Infrastructure Management and Operation skills and competencies for data science profession

Q25: **What are the essential competences/skills a data scientist should have in the field of Research Infrastructures (RIs) ?0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience**

General knowledge about existing European and National RIs (types, how to get involved, …)	3
Use existing European and National RIs to perform large scale experimentations	5
Understand the technical Operation and Exploitation of existing RIs	5
Understand the Policy-making of RIs in Europe and the world	5

Q26: If applicable, please elaborate on other skills on research infrastructures:	*Respondent skipped this question*

PAGE 10: Scientific and Research methods skills and competencies for the data science profession.

Q27: **What are the competences/skills data scientists should have in the field of Scientific and Research Methods?0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience**

Create new understandings by using the scientific method (hypothesis, test, and evaluation) or similar engineering research and development methods	3
Direct systematic study toward understanding the observable facts, and discover new approaches to achieve research or organisational goals	3
Systematically use investigation or experimentation to discover actionable knowledge and devise new applications	3
Be able to translate strategies into action plans and follow through to completion	5
Contribute to and influence the development of organizational objectives	5
Apply ingenuity to complex problems, develop innovative ideas	5

Q28: If applicable, please elaborate on other skills on scientific and research methods:	*Respondent skipped this question*

PAGE 11: Domain related skills and competencies for the data science profession

Q29: **What are the competences/skills data scientists should have in the field of Domain related expertise (using here Business Process Management as one example of a domain)?0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience**

Understand business and provide insight, translate unstructured business problems into an abstract mathematical framework	1
Use data to improve existing services or develop new services	3
Participate strategically and tactically in financial decisions that impact management and organizations	1
Provide scientific, technical, and analytic support services to other organisational roles	2
Analyse customer data to identify/optimise customer relations actions	3
Analyse multiple data sources for marketing purposes	3

Q30: If applicable, please elaborate on other skills on domain related expertise:	*Respondent skipped this question*

PAGE 12: Communication and interdisciplinary skills and competencies for the data science profession

Q31: **What are the competences/skills a data scientist should have in the field of Communication and interdisciplinary work?0: Not relevant1: The skill is relevant but I cannot judge the level of expertise2: General knowledge 3: General knowledge plus practical experience 4: Advanced theoretical knowledge 5: Advanced theoretical knowledge plus practical experience**

Understand and deal with the communication barriers in interdisciplinary collaborations	5
Know techniques for team building (leadership and management attributes, communication strategies, personal rewards, training and development)	5
Understand Business process management (improve business using Big data and a data analytics, IS and Business strategy alignments, Service Level Management, Business plan development)	5
Ability to use tools to facilitate and enhance the processes and outcomes of collaborative, team-based work	3
Data scientists should have Inter-professional education, combining at least two different fields.	3

Q32: If applicable, please elaborate on other skills on communication and interdisciplinary work: *Respondent skipped this question*

PAGE 13: End of Survey

Q33: **Would you be interested in the outputs of EDISON and having a free one-year subscription to the DataSciencePro.eu portal?**

Yes (Please provide your contact details: name, email or phone)
maria.dimou@cern.ch