Skills Transferability Matrix

Data Scientists

With unique needs and goals, organizations have difficulty adapting effective policy for management and drawing conclusions from their data. Data Scientists help organizations navigate this complex environment and develop models and software through knowledge and skills relating to programming and statistics. This knowledge and set of skills is readily transferable to other roles within information technology. In order to conduct studies and draw conclusions, they use strong analytical and reasoning skills, applicable throughout professional science roles.

Skills

Skills are developed through training and experience, and are the practical proficiencies someone possesses. The following are top key skills data scientists employ in their work:

1. Critical Thinking
2. Complex Problem Solving
3. Programming
4. Judgement & Decision Making
5. Systems Analysis and Evaluation

Technical Knowledge

Technical Knowledge is the understanding of theory and utility of modern tools in a work environment. The following tools are used by data scientists regularly:

1. Business intelligence and data analysis software
2. Database management system software
3. Requirements analysis and system architecture software
4. Metadata management software
5. Data mining software

Tasks

Tasks are the assigned duties that an occupational group performs in their daily work. The following are the tasks data scientists most regularly encounter:

1. Develop computer or information security policies or procedures.
2. Collaborate with others to determine design specifications or details.
3. Develop procedures for data management.
4. Design computer modelling or simulation programs.
5. Create databases to store electronic data.

Abilities

Abilities refer to the innate faculties that allow workers to carry out tasks and activities. The following are the top abilities that data scientists possess:

1. Deductive and Inductive Reasoning
2. Information Ordering
3. Problem Sensitivity
4. Written and Oral Comprehension and Expression
5. Category Flexibility

Skills Transferability Matrix

FOCAL's Skills Transferability Matrices analyze the transferability of an occupation across a multitude of other occupations on the basis of similarities in **skills**, **technical knowledge, tasks,** and **abilities** as outlined by the O*Net database. It aims to show workers how to leverage their skill set in changing occupations, planning a career path, and transitioning to other industries. It also assists policy makers and educators address changing skill sets and areas of opportunity for workforce entrants in developing industries. Employers can also use this tool in reskilling or upskilling workers to circumvent skills shortages, and reduce the hiring and training challenges.

Data Scientists					
Occupations	Skills	Technical Knowledge	Tasks	Abilities	Total
Information systems analysts and consultants	90%	92%	48%	92%	80%
Information systems testing technicians	83%	88%	28%	89%	72%
Computer network technicians	85%	86%	18%	89%	70%
Web designers and developers	87%	74%	22%	91%	68%
Computer engineers (except software engineers and designers)	85%	77%	19%	88%	67%
Computer programmers and interactive media developers	82%	77%	9%	91%	65%
Computer and information systems managers	77%	68%	0%	89%	59%
Software engineers and designers	86%	47%	13%	86%	58%
Industrial and manufacturing engineers	85%	36%	0%	85%	52%
Electrical and electronics engineers	84%	33%	0%	84%	50%
Drafting technologists and technicians	84%	29%	0%	86%	50%
Architectural technologists and technicians	81%	24%	0%	88%	48%
Metallurgical and materials engineers	79%	20%	0%	83%	45%
Supervisors, other products manufacturing and assembly	72%	23%	0%	79%	43%
Supervisors, electrical products manufacturing	72%	23%	0%	79%	43%

After scanning over 2,600 skills, technical competencies, tasks, and abilities of each of the 500 occupations as defined by the National Occupational Classification (NOC) system, a skills transferability matrix for data scientists is produced. In the matrix above, a high score is highlighted in green and indicates the high transferability potential of an attribute of an occupation with that of data scientists. Lower or no transferability areas are marked in red. A strong background of programming and data management gives data scientists a high degree of transferability to professional technology roles, from hardware to software engineering and networking and consultation work. There is an observable transferability with information system management, indicating that data scientists may possess the skills and abilities, as well as technical knowledge to transfer into managerial roles within organizations with sufficient training and experience. Loose transferability is observed with roles in professional sciences, such as technicians and engineers within manufacturing, indicating some relation in the abilities and skills required between the fields.

To learn more about developments, trends and new technologies in Canada's automotive manufacturing industry, visit our website futureautolabourforce.ca.
You can also check our social media by following these links:

/focalinitiative
@FocalInitiative
/focal-initiative