

SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY				
SKILLS MAP – SENIOR DATA ENGINEER				
<b>Sector</b>	Infocomm Technology			
<b>Track</b>	Data and Artificial Intelligence			
<b>Sub-track</b>	Data Engineering			
<b>Occupation</b>	Data Engineer			
<b>Job Role</b>	<b>Senior Data Engineer</b>			
<b>Job Role Description</b>	<p>The Senior Data Engineer designs, implements and oversees maintenance of data flow channels and data processing systems that support the collection, storage, batch and real-time processing, and analysis of information from structured and unstructured sources in a scalable, repeatable and secure manner. He/She assists data scientists with the extraction of valuable insights from data sets to derive valuable and actionable insights and recommendations that support business requirements. He involves in rollouts, upgrades, implementation and release of data system changes as required for streamlining of internal practices.</p> <p>He is proficient in database systems, scripting and programming languages required by the organisation. He is also familiar with the relevant software platforms on which the solution is deployed on.</p> <p>The Senior Data Engineer possesses natural inclination for understanding business processes and relevant data requirements. He easily builds rapport with others and is able to put forth his ideas and recommendations in a persuasive manner, to influence stakeholders and decisions.</p>			
<b>Critical Work Functions, Key Tasks and Performance Expectations</b>	<b>Identify business needs</b>	Assess the suitability of data structures to ensure availability, integrity, quality, scalability and accessibility of data		In accordance with:  • Model AI Governance Framework
		Translate business' data needs to technical system requirements		
		Evaluate suitability of technologies and products in database and data processing for integration and storage		
	<b>Build and maintain data pipeline</b>	Build data flow channels and processing systems to extract, transform, load and integrate data		
		Validate data extraction, preparation and processing systems for accuracy of data and outputs		
		Create data storage plans and solutions for information storage and extraction		
		Lead project rollouts, upgrades, implementation and release of data system changes		
		Analyse data system performance and develop solutions for improvements		
		Build a metadata system to ensure documentation and cataloguing of all available data		
		Formulate data backup and fail-safe plans as part of business continuity planning		
	<b>Optimise performance of solutions</b>	Ensure the security, privacy and anonymity of users accessing data systems		
		Evaluate existing technologies and technology practices		
		Resolve data integrity, performance, and availability issues		
Identify opportunities for improvements and optimisation to systems and processes				
<b>Skills and Competencies</b>			<b>Generic Skills and Competencies (Top 5)</b>	
	<b>Technical Skills and Competencies</b>			
	Business Needs Analysis	Level 3	Leadership	Advanced
Change Management	Level 4	Developing People	Intermediate	

	Computational Modelling	Level 4	Communication	Intermediate
	Configuration Tracking	Level 3	Transdisciplinary Thinking	Advanced
	Data Design	Level 4	Computational Thinking	Advanced
	Data Engineering	Level 4		
	Data Ethics	Level 5		
	Data Governance	Level 5		
	Data Migration	Level 4		
	Data Strategy	Level 5		
	Database Administration	Level 4		
	Emerging Technology Synthesis	Level 5		
	Learning and Development	Level 4		
	Manpower Planning	Level 4		
	People and Performance Management	Level 3		
	Project Management	Level 5		
	Quality Standards	Level 4		
	Security Architecture	Level 3		
	Stakeholder Management	Level 4		
	Strategy Implementation	Level 4		
	Strategy Planning	Level 4		
	System Integration	Level 5		
<b>Programme Listing</b>	For a list of Training Programmes available for the ICT sector, please visit: <a href="http://www.skillsfuture.sg/skills-framework/ict">www.skillsfuture.sg/skills-framework/ict</a>			

The information contained in this document serves as a guide.