

SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – DATA ARCHITECT			
Sector	Infocomm Technology		
Track	Data and Artificial Intelligence		
Sub-track	Data Engineering		
Occupation	Data Architect		
Job Role	Data Architect		
Job Role Description	<p>The Data Architect designs systems to facilitate access to and finding of information. He/She plans, designs, develops and tests internal information-delivery solutions and data models with the focus on providing positive user experience. He works with end users to specify requirements, create and implement designs to meet internal and client-facing objectives. He develops information management standards and practices, in compliance with data privacy policies and ethics and governance frameworks.</p> <p>He works in a team setting and 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 Data Architect integrates diverse needs and perspectives from internal and external clients, and possesses a creative mind to develop new and fresh ideas and solutions. He possesses strong leadership and communication abilities and is able to influence key stakeholders and clients he interfaces with.</p>		
Critical Work Functions, Key Tasks and Performance Expectations	Critical Work Functions	Key Tasks	Performance Expectations
	Identify business needs	Determine data engineering requirements across all systems, platforms and applications based on artificial intelligence solutions	In accordance with: <ul style="list-style-type: none"> Model AI Governance Framework
		Advise the business on data requirements based on information and insights desired	
		Establish and implement data ethics, privacy and security guidelines and policies for potential new business cases that involve data engineering processes	
		Advise on latest machine learning libraries, strategies, and products in database and data processing software based on business requirements	
	Design data architecture	Define the desired state of information flows through the organisation to determine the organisation's data architecture	
		Assess existing systems to evaluate their usability, usefulness, visual design and content	
		Guide the alignment of information management standards with the enterprise architectural plan and information security standards	
		Develop strategies for seamless and low-risk migration of data between systems	
		Communicate the data architecture, design and recommendations to stakeholders	
	Bring artificial intelligence (AI)/machine learning (ML) models into production	Formulate strategies for code compilation for model production	
		Formulate AI/ML development pipeline strategies and infrastructure for the organisation	
		Provide technical guidance for scaling and pre-deployment of AI/ML models	
Deploy AI/ML models	Create deployment blueprints for AI/ML models		
	Provide technical guidance for deployment and optimisation of AI/ML models		
	Ensure deployed AI/ML models are aligned with the organisation's core values and comply with data governance and ethics guidelines		

	Manage people and organisation	Review operational strategies, policies and targets across teams and projects		
		Develop strategies for resource planning and utilisation		
		Review the utilisation of resources		
		Oversee the development of learning roadmaps for teams and functions		
		Establish performance indicators to benchmark effectiveness of learning and development programmes against best practices		
		Implement succession planning initiatives for key management positions		
Skills and Competencies	Technical Skills and Competencies		Generic Skills and Competencies (Top 5)	
	Business Needs Analysis	Level 4	Leadership	Advanced
	Change Management	Level 5	Communication	Advanced
	Computational Modelling	Level 5	Developing People	Intermediate
	Configuration Tracking	Level 4	Transdisciplinary Thinking	Advanced
	Data Design	Level 5	Computational Thinking	Advanced
	Data Engineering	Level 5		
	Data Ethics	Level 6		
	Data Governance	Level 6		
	Data Strategy	Level 6		
	Database Administration	Level 5		
	Emerging Technology Synthesis	Level 4		
	Learning and Development	Level 5		
	Manpower Planning	Level 4		
	People and Performance Management	Level 4		
	Project Management	Level 6		
	Quality Standards	Level 5		
	Security Architecture	Level 4, Level 5		
	Stakeholder Management	Level 5		
	Strategy Planning	Level 5		
System Integration	Level 6			
Programme Listing	For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict			

The information contained in this document serves as a guide.