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| **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** | 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.  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.  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. | | | | |
| **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:     * 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 | | | | |
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| The information contained in this document serves as a guide. | | | | | |