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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – DATA SCIENTIST/ARTIFICIAL INTELLIGENCE SCIENTIST** | | | | | |
| **Sector** | Infocomm Technology | | | | |
| **Track** | Data and Artificial Intelligence | | | | |
| **Sub-track** | Data Science/Artificial Intelligence Science | | | | |
| **Occupation** | Data Scientist/Artificial Intelligence Scientist | | | | |
| **Job Role** | **Data Scientist/Artificial Intelligence Scientist** | | | | |
| **Job Role Description** | The Data Scientist/Artificial Intelligence Scientist plans and leads the development of new and advanced data analytic techniques, methodologies and analytical solutions from design, prototyping and testing. He/She identifies and develops core data and artificial intelligence (AI) science components for the delivery of projects, architects specialised database and computing environments, explores and visualises complex data set to provide incremental business value. He extracts and integrates data from various sources, and creates advanced models and algorithms suitable for the business use case. He conducts testing on data and AI models, interprets findings from testing, and evaluates model performance for scaling and deployment. He develops compelling and logically structured communication materials to facilitate stakeholder buy-in.  He works in a team setting and is proficient in statistics, 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 Scientist/AI Scientist has strong analytical and critical thinking skills to identify and solve problems. He is passionate about analysing and resolving complex business problems, displaying intellectual curiosity towards using data and AI to address business needs and challenges. He is a data storyteller, and is able to influence key stakeholders and spearhead a data driven approach to resolve business issues. | | | | |
| **Critical Work Functions, Key Tasks and Performance Expectations** | **Critical Work Functions** | **Key Tasks** | | | **Performance Expectations** |
| **Manage data preparation and modelling** | Define objectives and hypothesis for research on data and artificial intelligence (AI) models | | | In accordance with:     * Model AI Governance Framework |
| Analyse the ways in which datasets may be biased and address this in safety measures and deployment strategies | | |
| Conduct extraction and integration of data including features from different data sources | | |
| Develop multiple models and algorithms suitable for the use case | | |
| Perform model comparison to draw inferences on variable importance | | |
| Select the best model based on pre-defined evaluation criteria | | |
| Account for data ethics and policies in model selection and evaluation process | | |
| Interpret and evaluate model performance for scaling and deployment | | |
| **Build and assess models** | Conduct testing on final model in real-time business conditions prior to deployment | | |
| Scale and deploy models in real-time business conditions for end user consumption | | |
| Initiate autonomous monitoring to scale human oversight | | |
| Document modelling techniques used and assumptions made against test outcomes | | |
| Enable end user capability to use AI/ Data Science products effectively | | |
| **Present data driven business value of data science/AI models** | Create reports and deliverables based on insights derived from the model results | | |
| Develop compelling, logically structured presentations including story-telling of research and/or analytics findings to secure stakeholder commitment | | |
| Contribute to the creation of leading-edge resources, including playbooks, guides, blog posts, videos, etc. | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Generic Skills and Competencies** | |
| Business Innovation | | Level 5 | Leadership | Advanced |
| Business Needs Analysis | | Level 5 | Developing People | Intermediate |
| Computational Modelling | | Level 5 | Computational Thinking | Advanced |
| Computer Vision Technology | | Level 4 | Communication | Intermediate |
| Data Design | | Level 5 | Transdisciplinary Thinking | Advanced |
| Data Ethics | | Level 5 |  | |
| Data Governance | | Level 5 |
| Data Strategy | | Level 5 |
| Design Thinking Practice | | Level 5 |
| Emerging Technology Synthesis | | Level 4 |
| Intelligent Reasoning | | Level 5 |
| Pattern Recognition Systems | | Level 5 |
| Project Management | | Level 5 |
| Quality Standards | | Level 5 |
| Self-learning Systems | | Level 4 |
| Solution Architecture | | Level 5 |
| Software Design | | Level 5 |
| Stakeholder Management | | Level 4 |
| Test Planning | | Level 5 |
| Text Analytics and Processing | | 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. | | | | | |