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| **SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – ARTIFICIAL INTELLIGENCE/MACHINE LEARNING ENGINEER** | | | | | | |
| **Sector** | Infocomm Technology | | | | | |
| **Track** | Data and Artificial Intelligence | | | | | |
| **Sub-track** | Machine Learning Engineering | | | | | |
| **Occupation** | Artificial Intelligence/Machine Learning Engineer | | | | | |
| **Job Role** | **Artificial Intelligence/Machine Learning Engineer** | | | | | |
| **Job Role Description** | The Artificial Intelligence /Machine Learning Engineer supports the production of scalable and optimised artificial intelligence (AI)/machine learning (ML) models. He/She focuses on building algorithms for the extraction, transformation and loading of large volumes of real-time, unstructured data in order to deploy AI/ML solutions from theoretical data science models. He runs experiments to test the performance of deployed models, and identifies and resolves bugs that arise in the process.  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 in which the models are deployed. He should be knowledgeable of the requirements under the Model AI Governance Framework and the Personal Data Protection Act (PDPA) in the course of his work on AI/ML models.  The AI/ML Engineer is a determined individual who is comfortable working with large data sets, has a keen interest in problem solving and experimentation, and enjoys the iterative process of development and resolving issues. | | | | | |
| **Critical Work Functions, Key Tasks and Performance Expectations** | **Critical Work Functions** | **Key Tasks** | | | | **Performance Expectations** |
| **Conduct research on artificial intelligence (AI)/machine learning (ML) models and algorithms** | Research and implement ML algorithms and tools for AI/ML model development | | | | In accordance with:     * Model AI Governance Framework * Personal Data Protection Act 2012, Personal Data Protection Commission |
| Identify appropriate algorithms based on user requirements | | | |
| Select appropriate datasets and data representation methods for analysis | | | |
| Evaluate AI/ML models for production | | | |
| **Build and assess AI/ML models** | Develop codes to package the AI/ML models for scaling | | | |
| Develop AI/ML development pipeline and infrastructure | | | |
| Develop scalable data pipelines to extract, transform, load and integrate unstructured data from various sources | | | |
| Scale AI/ML models for production | | | |
| Support continuous improvement of AI solutions | | | |
| **Deploy AI/ML models in solutions** | Test the operation and performance of the deployed models | | | |
| Identify bugs during deployment and create bug fixes to address issues | | | |
| Engage in code reviews to improve AI/ML models | | | |
| Perform statistical analysis and fine tuning of the models using test results | | | |
| Prepare documentation to outline data sources, models and algorithms used and developed | | | |
| Research and implement machine learning algorithms and tools for AI/ML model development | | | |
| **Skills and Competencies** | **Technical Skills and Competencies** | | | **Generic Skills and Competencies** | | |
| Business Needs Analysis | | Level 4 | Leadership | | Intermediate |
| Cloud Computing | | Level 3 | Developing People | | Intermediate |
| Computational Modelling | | Level 3 | Transdisciplinary Thinking | | Intermediate |
| Computer Vision Technology | | Level 4 | Computational Thinking | | Intermediate |
| Configuration Tracking | | Level 3 | Communication | | Intermediate |
| Data Design | | Level 4 |  | | |
| Data Engineering | | Level 3 |
| Data Governance | | Level 4 |
| Data Strategy | | Level 4 |
| Database Administration | | Level 3 |
| Emerging Technology Synthesis | | Level 4 |
| Intelligent Reasoning | | Level 4 |
| Pattern Recognition Systems | | Level 4 |
| Project Management | | Level 4 |
| Security Architecture | | Level 3 |
| Self-Learning Systems | | Level 4 |
| Stakeholder Management | | Level 4 |
| System Integration | | Level 3 |
| Test Planning | | Level 3 |
| Text Analytics and Processing | | Level 4 |
| **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. | | | | | | |