**AI SINGAPORE – AI Certified Engineer Level 2 Technical Report Template**

**Overview**

1. This template is to be used as a guide to help frame the technical report for AI Certified Engineer Level 2 applicants so that the assessors can better understand and evaluate your project.

2. To assist us in evaluating your application effectively, please provide the requested information in Sections I – XI as completely and accurately as possible.

3. To assist you in your preparation of the report, we have provided guiding questions in *grey italics* in each section. Please replace them with the required information. Indicate “NA” if the information is not applicable.

**For the purposes of this evaluation, an ‘AI solution’ consists of the 3 components:**

1. **A machine learning/deep learning model designed to answer an AI problem**
2. **The data preparation and model deployment pipelines set up to enable its integration into a production system**
3. **The infrastructure/platform set up to support the process**

4. Please note that to validate your technical report, we may share it within the AI Singapore ecosystem of AI Certified Engineers. If you are **not agreeable** to this, please let us know.

**Focus Areas**

5. Depending on your role in the organisation, you may have focused on certain components of the AI solution during the course of the development. For instance, AI engineers might have a) and b) as their key responsibility areas, while Platforms Engineers would have concentrated on b) and c) as their core duties.

6. In Section IV (*Solution Design and Development*), you will be asked to indicate your mix of involvement across the 3 components, and to focus your write-up accordingly, placing the most emphasis on the areas you were primarily responsible for.

**Report Guidelines**

7. Throughout the report, it would be beneficial for you to:

1. acknowledge and address the guiding questions provided in each section
2. specify examples to illustrate key points
3. describe how your solution is differentiated from others
4. explain the thought processes and considerations taken in the course of the development work.

8. Where feasible, you are encouraged to insert supporting information in the form of graphics, diagrams, charts or tables to better support your explanations.

9. We would encourage you to aim for a report length of **10 to 15 pages** in order to convey the appropriate depth of information.

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1. **GENERAL INFORMATION**

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| **Applicant’s Name**  **(as in your application form)** |  |
| **Title/Description of commercialised AI Solution** | *Provide a title/description of the AI Solution* |
| **Project Type** |  |

1. **EXECUTIVE SUMMARY**

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| *Provide a concise summary of the entire report here, including key highlights of the AI solution.*  *Share your thoughts on possible improvements that can be made to the AI solution in the future.* |

1. **PROBLEM STATEMENT**

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| *Explain the overall objective that the AI solution is trying to achieve for the business/ organisation.*  *What benefit does the solution bring that would not be possible if it had not been developed?*  *Is there any existing solution in the market? If yes, why are you not using it?* |

1. **SOLUTION DESIGN AND DEVELOPMENT**

Please tell us the mix of responsibilities you had across the following components of the AI solution:

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| **Component** | **Percentage of time spent (%)**  *Insert a number between 0 and 100 in each cell. The 3 entries must add up to 100%* |
| **a) A machine learning/deep learning model designed to answer an AI problem** |  |
| **b) The data preparation and model deployment pipelines set up to enable its integration into a production system** |  |
| **c) The infrastructure/platform set up to support the process** |  |

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| ***In this section, please address all of the below questions, while placing more emphasis on the areas you had more responsibility over.***  ***Throughout your write-up, please discuss how you factored in wider business considerations in the development of the solution.***  *General*  *In relation to the problem statement, discuss the considerations you undertook when evaluating potential approaches and designing an AI solution that is scalable as well as generalisable to the intended use cases.*  *Describe the consultations you had with business/ technical stakeholders in designing the solution, and how these influenced the development.*  *Model Design and Development*  *Outline the scale and nature of the raw data being used to develop the AI solution.*  *What steps were taken to verify that the data is generalisable to the intended use cases?*  *Highlight a few key data validation/ exploration/ feature engineering steps applied in the course of developing the model that you feel had the biggest impact on quality.*  *Explain the considerations behind the algorithm(s) chosen, and highlight a few key modelling strategies taken that had the largest impact on quality.*  *Describe how the model’s performance was evaluated, and the reasons for the chosen metrics.*  *ML Infra & Ops*  *Outline the environment used for the model training including the infrastructure, any AI accelerators used, frameworks and any other components used.*  *Provide information of how much (percentages) of the project budget goes towards the ML infrastructure if available.*  *Clarify the data sources as well as the means and processes used to obtain them.*  *Highlight any details on tracking model experiments including time taken for training/re-training, tests and steps towards reproducibility for the purposes of data and model provenance.*  *Highlight any details on tracking model performance including time taken for inferencing, feedback mechanisms and system considerations mitigating model decay/data drift.*  *Explain the considerations and tradeoffs towards the subject of scaling data processing as well as model training if any.*  *Solution Deployment*  *Provide an outline of the architecture enabling the model’s integration into a production system, and explain the considerations taken when deciding upon the chosen design.*  *Describe the data preparation and model deployment pipelines built to support the deployment, including the purpose of any tools or applications used.*  *Describe the testing performed to ensure the codebase runs as expected and meets the intended requirements.* |

1. **TEAM LEADERSHIP**

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| *Outline how you managed the entire development process to achieve quality and timely delivery, particularly in the face of challenges.*  *If you were managing a team, share how you led, mentored and inspired them to achieve the team’s goals.*  *Provide examples of effective communication you facilitated across cross-functional teams.* |

1. **END USERS / CUSTOMERS**

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| *Who are the end users/ customers of the AI solution?*  *How was the solution’s performance tested and verified to meet the desired standards?*  *Share how you enabled a clear understanding of the solution’s benefits as well as limitations to both technical and non-technical stakeholders.*  *Explain how you obtained buy-in and support from other stakeholders in the organisation for the adoption of the solution.*  *Describe how the AI solution has been performing in production, including measures taken to monitor its ongoing relevance and continuous improvement. What measurements are in place to assess its organisational impact, as well as the satisfaction of end users/ customers?* |

1. **ETHICS AND GOVERNANCE**

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| *Discuss how you factored the Model AI Governance Framework released by Singapore’s PDPC (or other applicable ethics and governance frameworks) into the design and delivery of the AI solution.*  *How well do you feel the solution adheres to the framework(s), and what can be improved upon?* |

1. **ESTIMATED PROJECT VALUE**

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| *Please detail all relevant project costs i.e manpower costs, compute costs as well as any other costs related to the design, development and deployment of the AI product.* |

1. **REFERENCES**

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| *Please provide a list of relevant names with their contact number, email and job title for this commercialised AI solution.* |

1. **CONSENT**

☐ I agree that the above collected information will be used for the purposes of evaluating and administering the programme and may be disclosed to National University of Singapore, AI Singapore, supporting Singapore Government bodies of AI Singapore and appointed AI Certification Assessors.