Artificial Intelligence Literacy Framework

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Contents

Artificial Intelligence Literacy Framework

Introduction

The Artificial Intelligence Literacy Framework (AILF) defines the competencies students at the University of Adelaide should develop to use artificial intelligence (AI) tools effectively and responsibly.

The AILF is organised in four dimensions:

The overall structure of the AILF is inspired by the proposed definition of AI literacy outlined in Ng et al. (2021).

Background

Development of the AILF began in February 2024 as an initiative led by the University Library, with a group of academic staff, professional staff, and students meeting to brainstorm the skills, knowledge, and attitudes students should develop to use AI effectively and responsibly.

Between March and May 2024, the University Library paired the output from this group with a review of recent academic literature in AI literacy (listed in the Bibliography of this document) to create the first draft of the AILF.

In May 2024, the AILF was included as a key deliverable of the Learning and Teaching AI Action Plan (LTAAP) working group as part of the Education in a Digital World (EDW) strategy implementation.

The AILF is intended to inform and align the central delivery of student support and training in the effective and responsible use of AI. Staff AI literacy and how AI capability development should be embedded in curriculum are not in scope of the AILF.
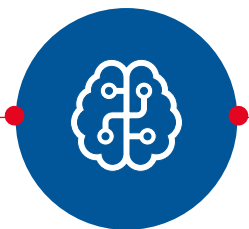
1. Recognise and Understand

The Recognise and Understand dimension of the AILF describes the competencies learners should develop to recognise and understand what AI is and how it works.
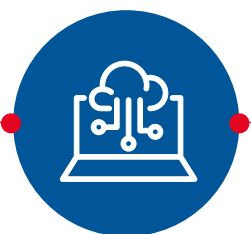
Competencies

1.1 Explain key AI terminology and concepts.

1.2 Identify different kinds of AI, including (but not limited to) machine learning and generative AI.

1.3 Distinguish between applications that use AI and those that use other forms of algorithmic technology.

1.4 Analyse how AI can be and is being applied across different sectors and academic disciplines.

1.5 Describe the basics of how AI models are trained and generate output.

1.6 Summarise how AI has developed and evolved over time.

Examples of training content

The following is a non-exhaustive list of content aligned to this dimension of the AILF:

- Definitions of AI
- Capabilities of AI (eg. generative, predictive, categorisation, etc.)
- History of AI's development
- Machine learning and neural networks
- AI training (eg. supervised vs. unsupervised, labelled vs. unlabelled, etc.)
- General AI vs. narrow AI
- Symbolic AI vs. machine learning
- How transformers and large language models generate content
- Models vs. applications/tools

2. Use and Apply

The Use and Apply dimension of the AILF describes the competencies learners should develop to generate reliable and accurate output from AI, apply their use of AI technology appropriately according to context, and document and acknowledge their use of AI according to academic conventions.
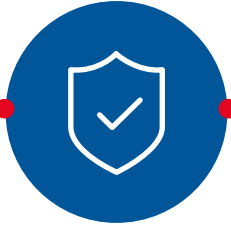
Competencies

2.1 Design and construct a prompt (or series of prompts) to make AI tools generate reliable and accurate outputs addressing clear, well-defined problems and questions.

2.2 Recognise and apply appropriate uses of AI tools according to context.

2.3 Demonstrate awareness of and adherence to policies and acceptable use guidelines for AI, including (but not limited to) academic integrity and information and data security.

2.4 Document and acknowledge use of AI tools and adhere to style guides for referencing AI output.

2.5 Recognise and reflect on the impact AI tools can have on learning (eg. benefits and risks of cognitive offloading).

Examples of training content

The following is a non-exhaustive list of content aligned to this dimension of the AILF:

- Prompting generative AI
- Advanced prompting techniques (eg. few-shot prompting, chain-of-thought, etc.)
- Iterating on generative AI output
- Experimenting with different uses
- How different uses of AI in education impact learning
- Advanced tool functionality (eg. custom instructions, custom GPTs, memory features, etc.)
- Conventions for documenting, acknowledging, and referencing AI use and output

3. Evaluate and Critique

The Evaluate and Critique dimension of the AILF describes the competencies learners should develop to critically evaluate and interrogate the quality of AI output and recognise the limitations of AI technology.

Competencies

3.1 Assess the impact of AI-generated outputs on human decision-making.

3.2 Compare the performance of different AI models and tools in different contexts and select the right tool according to purpose.

3.3 Recognise how AI models can sometimes generate incorrect, misleading, or unhelpful outputs.

3.4 Interpret results produced by AI systems, understanding limitations and potential errors.

3.5 Evaluate the data sources used to train AI models for quality and biases.

3.6 Develop strategies for mitigating risks associated with AI technologies.

3.7 Formulate arguments about the benefits and drawbacks of AI implementation.

Examples of training content

The following is a non-exhaustive list of content aligned to this dimension of the AILF:

- Bias in training data and AI output
- How AI tools intervene in the generation of output (eg. hidden instructions and filters)
- Generative AI hallucinations
- Importance of diverse human-generated input data
- Generation information literacy
- Quality metrics and leaderboards of AI models
- Checking sources of AI output

4. Reflect and Respect

The Reflect and Respect dimension of the AILF describes the competencies learners should develop to use AI ethically and appreciate the social, political, economic, cultural, and environmental impact of AI technology.

Competencies

4.1 Understand copyright and ownership, acknowledging the sources of information used by AI models and tools.

4.2 Take responsibility for the ethical use of AI tools and the outputs they assist in creating.

4.3 Determine what information should or shouldn't be shared with AI tools to respect privacy and copyright.

4.4 Consider the ethical implications of data collection and use in AI, including consent, privacy, and security.

4.5 Understand ethical concepts such as transparency and human autonomy.

4.6 Anticipate and address potential biases in AI outputs.

4.7 Recognise that AI can produce biased or discriminatory results and take steps to mitigate this.

4.8 Reflect on how AI solutions impact society and evaluate the necessity of using AI.

Examples of training content

The following is a non-exhaustive list of content aligned to this dimension of the AILF:

- Transparency and explainability ("black box" nature of AI)

- Discrimination and bias

- Labour impacts of AI

- Copyright and intellectual property

- Exploitation of creative human labour

- Environment impacts of AI training, computation, and use

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