Use of Artificial Intelligence (AI) tools in research

AI tools are widely used by researchers throughout different stages of their research project. AI tools can generate hypotheses, analyse data, perform predictive modelling, create content, and aid in the automation of research techniques including journal papers and research theses. However, researchers should not rely solely on AI, as they may risk missing critical information. They also must ensure they are using AI in compliance with their university's policies and guidelines, ensure accuracy of information and disclose the use of AI tools in every step of their research.

Below is a list of the common areas that AI tools can be used in research activities.

- **Research design:** Generative AI (Gen-AI) tools can be used in the early stages of writing research to identify research design, plan research proposals and generate and refine research ideas.
- **Editing assistance:** Gen-AI tools are used for proofreading purposes. They provide assistance with language and expression (clarity, grammar, spelling) and consistency.
- **Content assistance:** Gen-AI tools, used appropriately, can assist researchers with finding and synthesising information on any topic. They are also used to filter, summarise and critique information to be used in research. Some tools can help with generating images, videos and presentations.
- **Finding literature and references:** Common tools used to map out literature on a specific topic include Connected Papers, Inciteful, Litmaps, ResearchRabbit, R Discovery, Iris.AI. They can also help with finding references and evaluating the credibility of academic papers with tools such as Elicit, Scholarcy, Scite, Semantic Scholar.
- **Translating texts:** AI tools are also used to translate text to a desired language. Research findings can be translated through AI tools to make it easier to understand for different audiences.
- **Collecting, generating and analysing data:** AI tools can be used in various ways in data collection and generation. AI tools can help with analysing large sets of data to identify patterns and predict outcomes, creating spreadsheets and tables and organising information. In many cases, researchers are not allowed to upload sensitive data. However, some Gen-AI tools can be used to generate synthetic sets of data to avoid using existing data and risk breaching privacy.
- **Publishing Research:** Researchers can also identify relevant journals to publish their research once done using B!SON.
- **Drafting grant applications:** AI tools can be used to assist researchers in developing grant applications. However, caution is required as the use of AI tools increases the risk of privacy breaches, intellectual property and inaccuracy of information. Researchers must follow the policies that both the ARC and NHMRC release to guide researchers when using AI tools.

If you wish to add to the list, please reach out to UA using research@uniaus.edu.au.