

National College of Ireland

MSc / PgDip in Data Analytics

Release Date: Monday 31st July 2023

Submission Date: Monday 28th August 2023

Modelling, Simulation, and Optimisation

Terminal Assessment: Literature Review Paper

Deadline: 28th August 2023, 23:59

Weight: 40%

The Task

You are asked to write a **literature review on 4 papers** on Modelling, Simulation and Optimisation. These papers should share a common thread (i.e. a class of problems, methods, or algorithms related to material covered in class, like for example Genetic Algorithms), and a common application area (like for example Power Distribution).

You have free choice with regards to the application area, but it will help if you choose an area, you are familiar with from current, or previous experience.

The papers should be chosen from a considerable historical time frame covering at least 30 years. You may decide to choose one from each decade: 1980s, 1990s, 2000s, and 2010s. The last two years have been academically very productive. If you choose a paper from the last two years, it is acceptable if this is only published on arxiv.org. Otherwise, each source you decide to include in your literature review must be a verifiable **scientific publication**. A source will only be deemed acceptable, if it can be located in **Scopus** (<https://www.scopus.com/>) or has at least 6 citations in **Google Scholar** (<https://scholar.google.com>) or in **Semantic Scholar** (<https://www.semanticscholar.org>). Being covered by one of these sources doesn't mean that you have to retrieve it from there.

For each of these papers you should:

1. **Summarise key aspects** of the papers – highlighting any interesting, valuable, or contradicting viewpoints;
2. **Critically evaluate** key findings; specifically, their contributions and limitations in the context of the time of publication;
3. **Discuss the application** of their work; and
4. **Relate it to at least one of the other papers** you have reviewed.

Deliverables

The literature review must be submitted electronically in **.pdf** format via the Turn-It-In link provided in Moodle. The Filename should begin with your name and student number. The paper submitted should be exactly 3 pages in IEEE Conference Format¹. It should have at least the following sections:

- **Abstract** (max 200 words) – outlining the objective of the review including the common thread you have chosen and summarising key findings,
- **Keywords** (as you deem appropriate),
- **Introduction** – set the scene for the review highlighting the common thread and application area,
- **Review** – use one subsection for each of the publications,
- **Conclusions** – summarise the findings and answer the question your review was trying to answer in the context of the papers you have read and reviewed, and
- **Bibliography** – list all and only the references used: You should correctly reference the papers and any other sources you use. You may choose the referencing style of your liking but use it consistently.

For further details, please pay attention to the grading rubrics given below.

¹ (https://www.ieee.org/conferences_events/conferences/publishing/templates.html).

Academic Integrity

- By submitting your work on Moodle you declare that this is your own work, that all the formulations are your own and not taken from other sources (human or AI).
- Any material created by others must be properly referenced. Verbatim copies should be included in quotes.
- Figures or code samples not created by you should include an acknowledgement detailing the name(s) of the creator(s) and proper references.
- Students are strongly advised to familiarise themselves with the Guide to Academic Integrity. All submissions will be electronically screened for evidence of academic misconduct, e.g. plagiarism, collusion and misrepresentation. Any submission showing evidence of such misconduct will be referred to the college's processes.

Grading Rubric

	High end of H1	H1	H2-1	H2-2	Pass	Fail
Abstract: 5%	A succinct and complete abstract that includes the purpose, methods, and scope of the research, and includes relevant keywords.		A relatively succinct and largely complete abstract that includes the purpose, methods, and scope of the research, and includes relevant keywords.	An incomplete abstract that includes at least two of the purpose, methods, scope of the research and some relevant keywords.	A wordy but incomplete abstract that includes at least one of the purpose, methods, the scope of the research and some relevant keywords.	An inadequate abstract that does not address the purpose, methods or scope of the research. Includes no relevant keywords.
Introduction: 10%	A superb introduction that sets the topic in context, provides much relevant background information, explains the motivation for the research and describes the contribution to knowledge the research will make.		A very good introduction that sets the topic in context, provides a good amount of background information, and to a large degree explains the motivation for the research, describing the contribution to knowledge the research will make.	A good introduction that sets the topic in context, provides an adequate amount of background information, and adequately explains the motivation for the research.	An adequate introduction that provides some context and background information but fails to properly explain either the motivation for the research or the contribution to knowledge the research will make.	A weak introduction that does not set the topic in context, provides poor or no background information and does not explain either the motivation for the research or the contribution to knowledge.
Paper quality of writing, spelling, adhering to the template etc.: 15%	Review is excellently conducted. Page limit and template are adhered to. Practically no spelling or language mistakes.		Review is well conducted. Page limit is adhered to. Some mistakes in template, spelling and/or language use.		There are issues in referencing, spelling and grammar, clarity of discussion etc.	Template has not been adhered to, page limit has been exceeded by more than 15%, or paper is not readable.
Critical Review: 55%	The paper succinctly argues and discusses positive, negative and missing points of each paper as well as interplays between the papers in reference to the question posed. An in-depth discussion of the papers' applications is provided.	A good attempt has been made to the box left of this one.		There is a mismatch in the treatment of the papers reviewed. There are only 3 papers reviewed or only 3 papers meet the requirements	The discussion points may seem somewhat arbitrary. There is not much discussion of the applications. Only 2 papers meet the requirements.	The papers don't relate to the material covered in the module or the scope outlined in the abstract. There is little to no discussion on the applications. There are only 2 or fewer papers reviewed, or papers do not meet requirements.
Referencing: 15%	No mistakes in referencing style or bibliography.	At most 1 mistake in bibliography.	At most 2 mistakes in bibliography.	At most 3 mistakes in bibliography	A number of mistakes in bibliography or referencing	Too many mistakes in referencing, or use of a fake reference.