

COMPUTER SCIENCE: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

GUIDED PRESENTATION AND ESSAY WRITING

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<https://jahic.github.io/fitzed2026>

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OVERVIEW

- Introduction to Latex
- Introduction to essay writing
- Exercise and feedback

LATEX

- Typesetting system
- Widely used in scientific community
- Available online: www.overleaf.com
- <https://www.overleaf.com/gallery/tagged/essay>

ESSAY WRITING

- Problems you are trying to solve
- Your idea
- Benefits of your approach
- Actions list

ESSAY WRITING

- Abstract
- Introduction
- Related work
- Conceptual solution
- Implementation
- Evaluation
- Conclusion

ESSAY WRITING

- Abstract
 - Sentence 1: general problem
 - Sentence 2: existing approaches for solving the problem
 - Sentence 3: why and how existing approaches fail
 - Sentence 4: your idea
 - Sentence 5: benefits of your idea
 - Sentence 6: any highlights (e.g., from testing)
- Introduction
- Related work
- Conceptual solution
- Implementation
- Evaluation
- Conclusion

ESSAY WRITING

- Abstract
- Introduction
 - Broader introduction to the topic
 - Reference fundamental work
 - Research questions
 - Your contributions (results only, as a direct answer to the research questions)
 - Organisation of the paper (e.g., in Section 2, we present related work)
- Related work
- Conceptual solution
- Implementation
- Evaluation
- Conclusion

ESSAY WRITING

- Abstract
- Introduction
- Related work: how is your work different?
 - Peer reviewed vs non-reviewed work
 - IEEE, ACM, ScienceDirect
 - E.g., <https://ieeexplore.ieee.org/search/advanced/command>
 - "AI" AND "Scientific research"
- Conceptual solution
- Implementation
- Evaluation
- Conclusion

Publisher: IEEE

[Cite This](#)

 PDF

[Plain Text](#)

[BibTeX](#)

☐ Citation & Abstract

```
@INPROCEEDINGS{11491483,  
  author={Xiong, Feng and Yu, Xinguo and Wu, Hao},  
  booktitle={2025 International Conference on Intelligent Educa},  
  title={A Three-Stage Framework for Navigating AI-Empowered},  
  year={2025},  
  volume={},  
  number={},  
  pages={1-6},  
  keywords={Electronic countermeasures;MIMICs;Millimeter wave},  
  doi={10.1109/IEIR67391.2025.11491483}}
```

ESSAY WRITING

- Abstract
- Introduction
- Related work
- Conceptual solution
 - High-level overview of the solution
 - Inputs and outputs
 - Logic of algorithms
- Implementation
- Evaluation
- Conclusion

ESSAY WRITING

- Abstract
- Introduction
- Related work
- Conceptual solution
- Implementation
 - Toolchain, libraries, programming language
- Evaluation
- Conclusion

ESSAY WRITING

- Abstract
- Introduction
- Related work
- Conceptual solution
- Implementation
- Evaluation
 - Setup:
 - Goal of evaluation (usually aiming to demonstrate benefits of the conceptual solution and implementation for the problem introduced in the beginning)
 - Used benchmarks, tests, etc. Evaluation methodology. Design of experiments
 - Results: Raw results of experiments, no interpretation
 - Discussion: Discussion of results in the context of the goal of the evaluation
 - Threats to validity: Anything that could make results invalid (e.g., design of experiments, bias, limited scope, limited number of tests) and make them less generalizable. Criticize and defend your research.
- Conclusion

ESSAY WRITING

- Abstract
- Introduction
- Related work
- Conceptual solution
- Implementation
- Evaluation
- Conclusion
 - Considering the problem introduced at the beginning, conceptual solution, implementation, and the results from evaluation, does your solution solve the problem?
 - Future work

TODO

- Write an essay about your project
- Maximum 900 words!
- Do research
 - Find related work
- GenAI is unreliable for citations
- Send the essays and the presentation before 8am, 23 July 2026
 - As pdf
 - jj542@cam.ac.uk

TODOS

- Supervision Day 2: 22 July 2026
 - Prepare slides regarding your presentation (mini research project)
- 15 minutes per person + some time for questions

PRESENTATIONS

- Script - what did the speaker say?
- Verbal - how did the speaker say it?
- Slides - how effective were their visual aids?
- Physical - body-language and presence?