

Example 1 — Minimal or no substantive GenAI use

Declaration of generative AI use

I confirm that I have read the University and MPLS Division guidance on generative AI and have complied with it in preparing this thesis.

I have not used generative AI to generate mathematical content, proofs, theorem statements, examples, code, figures, literature-review text, or any substantive part of the argument.

I used standard local software tools for spelling, grammar, LaTeX syntax checking, reference formatting, and code diagnostics. These tools made only local corrections and did not generate or alter substantive mathematical content. I have not directly used any output from a generative AI system.

Example 2 — DPhil thesis in numerical analysis / scientific computing: extensive well-defined use for programming, literature search, plotting, critique

Declaration of generative AI use

I confirm that I have read the University and MPLS Division guidance on generative AI and have complied with it in preparing this thesis.

The original mathematical contributions of the thesis, including the problem formulation, algorithms, numerical analysis, experiments, and conclusions, are my own work except where standard scholarly references and co-authorship statements indicate otherwise.

I used the following generative AI tools for the preparation of this thesis: ChatGPT Edu, OpenAI, [model/version and date]; GitHub Copilot, GitHub/Microsoft, [model/version and date]; Copilot Chat, Microsoft, [model/version and date], and Gemini, Google, [model/version and date]. These tools were used as follows:

I used ChatGPT Edu and GitHub Copilot for programming. This included assistance with Python and Julia implementations of test problems, restructuring publicly available numerical solvers, writing unit tests, drafting plotting scripts, and debugging. Suggestions from these tools were never accepted without my own scrutiny. All final code was reviewed, tested against analytical solutions or benchmark cases where available, and checked for behaviour consistent with the algorithms stated in the thesis. The repository accompanying the thesis contains the final code, input files, plotting scripts, and computational environment.

I used ChatGPT Edu to improve plotting code for clarity and reproducibility, including legend placement, axis scaling, export formats, and consistency of notation across figures. I did not use any generative AI tools to create figures directly from prompts, to generate data, or to modify numerical results. Every plot in the thesis is generated by auditable code from the algorithms described in the thesis.

I used ChatGPT Edu and Microsoft Copilot Chat for literature triage. I asked for possible search terms, related areas, and candidate references concerning stability of adaptive time-stepping methods, stochastic gradient methods, and weak convergence of numerical schemes. All references, statements on prior work, and historical claims were checked against primary sources before inclusion.

I used Gemini for limited brainstorming and critical questioning. Typical prompts asked for alternative examples to test conjectures or informal explanations of why a numerical phenomenon might occur. These outputs were used as prompts for my own investigation only. No theorem, proof, algorithm, or interpretation in the thesis is directly based on a generative AI response. Where an AI-generated suggestion materially influenced a specific line of investigation, I added a local note in the relevant chapter.

I used ChatGPT Edu to obtain feedback on draft exposition, including clarity of chapter introductions, consistency of notation, and whether algorithm descriptions were comprehensible. I did not use it to write substantive thesis text, literature review passages, proofs, or conclusions. The final prose is my own.

No confidential, unpublished third-party, commercially sensitive, personal, or restricted data were entered into third-party generative AI tools. Substantive prompts and outputs that affected the research process have been retained and can be made available to the examiners if required.

Example 3 — DPhil thesis in pure mathematics: ideas, counterexamples, draft criticism

Declaration of generative AI use

I confirm that I have read the University and MPLS Division guidance on generative AI and have complied with it in preparing this thesis.

The original mathematical contributions of the thesis, including the problem formulation, theorems, proofs, and conclusions, are my own work except where standard scholarly references and co-authorship statements indicate otherwise.

I used ChatGPT Edu, OpenAI, [model/version and dates], Claude, Anthropic, [model/version and dates], and Perplexity, Perplexity AI, [model/version and dates]. These tools were used as follows:

I used Claude for exploratory discussion after I had already formulated the main research problems. For example, I asked for types of examples, possible analogies with adjacent areas, and ways in which proposed hypotheses might fail. These interactions were used as informal brainstorming only. Outputs were often mathematically incomplete or incorrect, and I did not treat them as trusted. Any example, counterexample, definition, or proof appearing in the thesis was subsequently constructed, verified, and written by me.

I used ChatGPT Edu to test the clarity of draft proof sketches. I sometimes pasted my own informal outline of a proof and asked whether the logical flows were clear or whether any step required a hidden assumption. I then checked all such feedback in detail. No proof in the thesis was generated by AI.

I used Perplexity to help with literature discovery by suggesting terminology and related areas, particularly around derived categories, stability conditions, and moduli problems. I verified all references directly against original papers or books before citing them. AI-generated bibliographic entries were not used without independent verification.

I used Claude to obtain comments on exposition, notation, and chapter organisation. I asked for feedback on whether definitions were introduced before use, whether symbols were ambiguous, and whether introductory paragraphs gave an accurate roadmap. I did not use AI to write thesis sections, literature-review text, proofs, theorem statements, or conclusions, and I have not copied or closely paraphrased AI-generated prose.

In one instance, an AI interaction suggested a broad class of examples to examine; this led me to investigate inverse-limit constructions that are discussed in Section 5.3. The specific construction, proof, and interpretation in that section are my own, and the relevant mathematical sources are cited there. A dated record of this interaction is retained and can be made available to the examiners.

No confidential, unpublished third-party, personal, or restricted material was entered into third-party AI tools.

Example 4 — DPhil thesis in statistics / data analysis: statistical programming, code discovery, data analysis workflows, feedback

Declaration of generative AI use

I confirm that I have read the University and MPLS Division guidance on generative AI and have complied with it in preparing this thesis.

The research questions, statistical modelling choices, mathematical derivations, empirical analyses, interpretation of results, and conclusions are my own work except where otherwise indicated by citation or co-authorship statement.

I used the following generative AI tools during the preparation of this thesis: ChatGPT Edu, OpenAI, [model/version and dates]; GitHub Copilot, GitHub/Microsoft [model/version and dates]; Microsoft Copilot Chat, Microsoft, [model/version and dates]; and Gemini, Google, [model/version and date]. These tools were used as follows:

I used ChatGPT Edu and GitHub Copilot for programming. This included assistance with drafting and refactoring R and Python scripts for data import, file-format conversion, data reshaping, checking variable encodings, writing unit tests, creating reproducible analysis pipelines, and improving code readability and efficiency. I also used these tools in a manner similar to searching programming documentation or Stack Overflow: for example, to identify appropriate R or Python libraries for converting between CSV, Parquet, Feather, NetCDF, HDF5, Stata, and SPSS formats; to obtain draft examples of package syntax; and to diagnose programming errors. All suggested code was inspected, modified where necessary, and tested on well-documented cases before use on novel examples. The final scripts used for data processing and analysis are included in the accompanying repository, together with environment files and instructions for reproduction.

I used Gemini to assist with basic exploratory data-analysis workflows. This included suggestions for code to compute descriptive summaries, simple diagnostic plots, distributional checks, and consistency checks between derived variables. No raw confidential, identifiable, or restricted data were entered into any third-party AI system. Where examples were needed, I used synthetic toy data or small fabricated examples designed only to illustrate the programming problem. All reported summaries, diagnostics, and analyses were produced from my own auditable scripts run on the approved research data environment.

I used ChatGPT Edu as statistical tutor with limited scope. In particular, I asked for reminders of standard diagnostic checks, candidate sensitivity analyses, and relevant software implementations for hierarchical regression models, multiple imputation, and cross-validation. I also asked for critical feedback on draft analysis plans. These outputs were used as starting points for my own statistical reasoning and for identifying sources to read; they were not treated as trustworthy themselves. The final model specifications, prior choices, simulation designs, diagnostic criteria, and sensitivity analyses were selected and justified by me, with reference to the statistical literature cited in the thesis.

I used Microsoft Copilot Chat and ChatGPT Edu for literature and software discovery. I asked for search terms, package names, and possible references relating to Bayesian

hierarchical modelling, missing-data methods, causal sensitivity analysis, and scalable approximate inference. All references and software claims were checked against original papers, package documentation, CRAN/PyPI/GitHub records, or other authoritative sources before use. AI-generated bibliographic entries were not copied into the thesis without verification.

I used ChatGPT Edu to improve plotting code, for example by suggesting clearer labelling, reproducible export settings, legend placement, and consistent formatting across figures. I did not use generative AI to create figures directly from prompts, to generate or alter research data, or to modify numerical results. Every figure in the thesis was generated by auditable R or Python code from the recorded data or simulation outputs.

I used ChatGPT Edu to obtain feedback on selected draft passages, including clarity of explanation, consistency of notation, and whether descriptions of statistical assumptions were understandable to a mathematically trained reader. I did not use generative AI to write substantive thesis sections, literature-review passages, statistical interpretations, or conclusions. No AI-generated prose has been copied or closely paraphrased into the thesis.