Course Project 2 (Due: 00:00 Jan 5, 2026)

- Find an interesting topic to work with, and write a report (either in Chinese or in English). The report should contain necessary components such as literature study, model/theory, numerical experiments, etc., while being concise. An unnecessarily long report will *negatively* impact your grade.
- You are free to choose to any topic that is *closely related to* what you have learned from this course. Some possible choices are provided as follows.
  - Implement a (reasonably complicated) numerical algorithm that is not covered by the course materials. E.g., the divided and conquer algorithm for SVD, the MRRR algorithm, ...
  - Analyze certain theoretical properties of a computational problem or numerical algorithm (beyond the course materials). E.g., perturbation analysis, convergence analysis, rounding-error analysis, ...
  - Establish models for some real world subjects and develop the corresponding numerical methods. E.g., solving large-scale linear systems or eigenvalue problem from real world applications.
  - Other fancy subjects that you can imagine.
- Submit necessary supplementary data (programs, test examples, etc.) along with your report.
- You are not encouraged to collaborate with others, though discussions are permitted. Helpful inputs from peers and/or LLMs (such as DeepSeek) should be properly acknowledged in the report.

  Note that LLMs can only be used to polish the language. A low-quality report that is logically incorrect runs the risk of being identified as a machine-generated report, and *may result in an immediate zero grade.*
- Your entire submission *cannot* exceed 8 MB (i.e., 8,388,608 bytes) unless otherwise approved.