

ActSc 972/ACC 772: Midterm Project

This project may be completed in groups of two.

Select a paper that has been published on quantitative finance, or statistical learning in finance or quantitative risk management in the past 10 years. The paper should describe a method/algorithm that may be applied to a real-world financial problem, and should present a numerical example illustrating the method.

For the project, you should:

1. Implement the algorithm presented in the paper (on whichever software platform you wish).
2. Design a simple test case and use it to validate your implementation of the algorithm (e.g. if the returns are i.i.d. normal and the sample size is very large, then the results should converge to something you can calculate explicitly; try to ensure that your code reproduces this result).
3. Try to evaluate the numerical method and results presented in the paper, for example by replicating the results, and implementing the method on a different dataset. Determine if you draw the same conclusions from your results as the authors did from the numerical results presented in the paper.
4. Critically evaluate the method proposed by the paper. Do you think it addresses the real-world financial problem in an appropriate way? What are the strengths/weaknesses of the method? Is there a way that an institution using the method in practice could run into trouble?

The project has two deliverables.

1. A short report (approx. 10-15 pages) describing the method and its application, summarizing your numerical results, and presenting your critical analysis of the paper.
2. A presentation (15 minutes), covering the same topics as above. ***If you work in a group, both group members must participate in the presentation.***

Important Dates

1. Selection of paper (provide a copy to the course instructor): Thursday, October 10.
2. Written Report (to be handed in during class): Tuesday, November 5.
3. Presentation: Week of October 28.

The project is worth 20% of the final course grade. The weight for the presentation will be 10% of the final course grade, and the weight for the written report will be 10% of the final course grade.