

# **Empirical Review of Models used for Predicting Financial Market Crashes Using Market Data**

COMP 451 Final Project: Final Report

By Ping-Chieh Tu, Adrien Bélanger, Inigo Torres

December 13<sup>th</sup> 2024

**Introduction** Inigo

**Litterature Review** Adrien

**Methodology** Adrien for market crash and Experiment choice Everyone for their assigned model

1. Adrien - Sliding window variation
  - (a) Exp 1 - 30 days
  - (b) Exp 2 - 14 days
  - (c) Exp 3 - 7 days
2. Oscar - Shift days variation
  - (a) Exp 1 - 3 days
  - (b) Exp 2 - 7 days
  - (c) Exp 2 - 14 days
3. Inigo - Combination
  - (a) Exp 1 - Window: X days; Shift days: Y days
  - (b) Exp 2 - Window: X days; Shift days: Y days
  - (c) Exp 3 - Window: X days; Shift days: Y days

**Empirical Evaluation** Oscar

**Discussion** 2 Experiments each

**Conclusion** Everyone does the conclusion for their own experiments

**Future Directions** Inigo

**Self-Assessment** Oscar

**Contributions** Everyone writes their own contribution

## Appendix

[1]

## References

- [1] S. Ahmed, I. E. Nielsen, A. Tripathi, S. Siddiqui, R. P. Ramachandran, and G. Rasool, “Transformers in time-series analysis: A tutorial,” *Circuits Syst. Signal Process.*, vol. 42, no. 12, pp. 7433–7466, 2023, ISSN: 0278-081X. DOI: 10.1007/s00034-023-02454-8. [Online]. Available: <https://doi.org/10.1007/s00034-023-02454-8>.