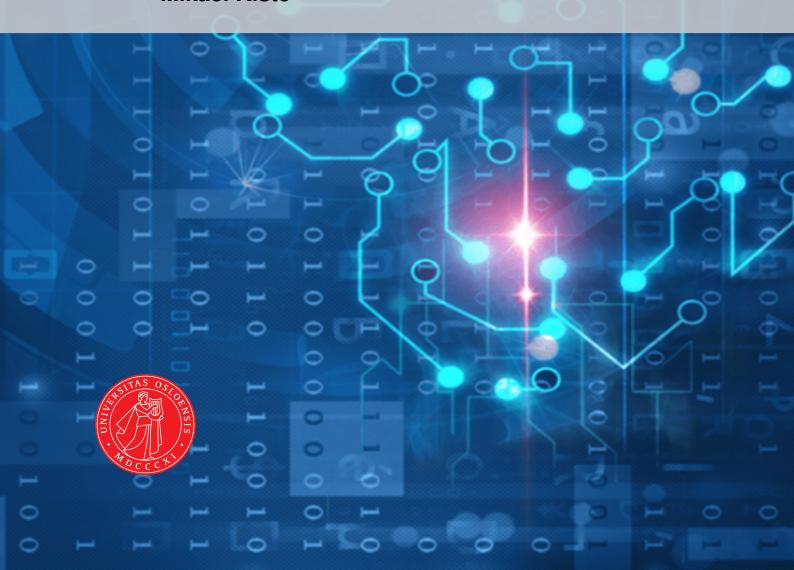


Regression analysis and resampling methods

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Contents

1	Introduction
2	Theory 2.1 Standard 2.2 Ridge
_	2.3 Lasso
	Method Result & Discussion
5	Conclusion
6	Appendix

CONTENTS Page 1 of 2

Abstract

[1]

- 1 Introduction
- 2 Theory
- 2.1 Standard

$$\beta = \left(\mathbf{X}^T \mathbf{X}\right)^{-1} \mathbf{X}^T \mathbf{y}$$

2.2 Ridge

$$\beta = \left(\mathbf{X}^T \mathbf{X} + \lambda \mathbf{I}\right)^{-1} \mathbf{X}^T \mathbf{y}$$

2.3 Lasso

$$\beta = \operatorname{argmin}_{\beta} \left\{ \sum_{i=1}^{N} \left(y_i - \beta_0 - \sum_{j=1}^{p} x_{ij} \beta_j \right)^2 + \lambda \sum_{j=1}^{p} |\beta_j|^q \right\}$$

- 2.4 k-fold and bootstrap
- 3 Method
- 4 Result & Discussion
- 5 Conclusion

References

- [1] Morten Hjorth-Jensen. Computational Physics. Lecture notes. 2015. URL: https://github.com/CompPhysics/ComputationalPhysics/blob/master/doc/Lectures/lectures2015.pdf.
- 6 Appendix

6 APPENDIX Page 2 of 2