Simulation Analysis

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6 August 2019

# Simulation Results

Scenario 1: continuous, few covariates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | false em mse | true em mse | treatment mse | treatment\_sd |
| simple null | 0.0000000 | 0.0650000 | 0.0376881 | 0.0911828 |
| simple lm | 0.0163463 | 0.0195865 | 0.0475811 | 0.1988350 |
| naive step | 0.0087649 | 0.0286564 | 0.0390509 | 0.1245184 |
| naive lasso | 0.0000044 | 0.0600036 | 0.0374649 | NA |
| glmmLasso | 0.0029297 | 0.0416313 | 0.0425793 | NA |
| bayes lasso | NA | NA | NA | NA |
| SSVS | 0.0014294 | 0.0312871 | 0.0256613 | 0.2255142 |

Scenario 2: continuous, many covariates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | false em mse | true em mse | treatment mse | treatment\_sd |
| simple null | 0.0000000 | 0.0450000 | 0.0326410 | 0.0696839 |
| simple lm | 0.0090090 | 0.0100006 | 0.0369853 | 0.1894097 |
| naive step | 0.0052686 | 0.0122773 | 0.0308609 | 0.1039292 |
| naive lasso | 0.0000715 | 0.0151377 | 0.0293215 | NA |
| glmmLasso | 0.0045919 | 0.0101160 | 0.1272992 | NA |
| bayes lasso | NA | NA | NA | NA |
| SSVS | 0.0014482 | 0.0065969 | 0.0127493 | 0.1533912 |

Scenario 3: binary, few covariates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | false em mse | true em mse | treatment mse | treatment\_sd |
| simple null | 0.0000000 | 0.0650000 | 0.0296602 | 0.1540924 |
| simple lm | 0.0612803 | 0.0587673 | 0.1497382 | 0.3562621 |
| naive step | 0.0353950 | 0.0705604 | 0.0910300 | 0.2038673 |
| naive lasso | 0.0012328 | 0.0630766 | 0.0326219 | NA |
| glmmLasso | 0.0000256 | 0.0647903 | 0.0360952 | NA |
| bayes lasso | NA | NA | NA | NA |
| SSVS | 0.0032338 | 0.0488509 | 0.0478581 | 0.3805902 |

Scenario 4: binary, many covariates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | false em mse | true em mse | treatment mse | treatment\_sd |
| simple null | 0.0000000 | 0.0450000 | 0.1040882 | 0.1030310 |
| simple lm | 0.0282809 | 0.0373566 | 0.1362787 | 0.3299740 |
| naive step | 0.0172084 | 0.0373241 | 0.1153055 | 0.1767848 |
| naive lasso | 0.0006210 | 0.0238572 | 0.0845724 | NA |
| glmmLasso | 0.0006907 | 0.0389800 | 0.0779627 | NA |
| bayes lasso | NA | NA | NA | NA |
| SSVS | 0.0039784 | 0.0109620 | 0.0265784 | 0.2461282 |