Model And Model Space

- Models may be fit from a variety of different classes
  - e.g. lm, gam, rpart
- and to variations of the original dataset
  - the (unmodified) dataset
  - subsets of the data
  - versions using transformed variables
  - datasets from sampling (e.g. bootstrapping)

Conclusion

Model space size is affected by the range of models, by transformations and by sampling
Models may be fit from a variety of different classes
  - e.g. lm, gam, rpart
  - and to variations of the original dataset
    - the (unmodified) dataset
    - subsets of the data
    - versions using transformed variables
    - datasets from sampling (e.g. bootstrapping)

Model space size is affected by the range of models, by transformations and by sampling

R. Seger, A. Unwin
Managing Large Sets Of Models
Models may be fit from a variety of different classes
- e.g. lm, gam, rpart
- and to variations of the original dataset
- the (unmodified) dataset
- subsets of the data
- versions using transformed variables
- datasets from sampling (e.g. bootstrapping)

Model space size is affected by the range of models, by transformations and by sampling

Model statistics (for model selection/comparison)
- global statistics for comparing overall fit
- measures of variable importance
- residuals for comparing local fit

Models yield much useful data for further analysis and you need a tool to organise that flood of data
Model Analysis

- model statistics (for model selection/comparison)
  - global statistics for comparing overall fit
  - measures of variable importance
  - residuals for comparing local fit

Conclusion

Models yield much useful data for further analysis and you need a tool to organise that flood of data

R. Seger, A. Unwin
Managing Large Sets Of Models

Outline

1. Introduction
2. Managing Models
   - Software Requirements
     - Model Repository
     - Model Comparison
In order to manage and compare model results a lot of data has to be stored. The software "MORET" uses a relational database for this (see next slide).

MORET

- store model forms and results
- commands in R ↔ series of textual input
- model information includes
  - formula
  - global statistics (e.g. deviance)
  - coefficient estimates
  - residuals

MORET

- store model forms and results
- commands in R ↔ series of textual input
- model information includes
  - formula
  - global statistics (e.g. deviance)
  - coefficient estimates
  - residuals
In order to manage and compare model results a lot of data has to be stored. The software "MORET" uses a relational database for this (see next slide).
<table>
<thead>
<tr>
<th><strong>Outline</strong></th>
<th><strong>Working With Moret</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Introduction</td>
<td>- load datasets with the MORET-GUI</td>
</tr>
<tr>
<td>- Managing Models</td>
<td>- fit models to the data</td>
</tr>
<tr>
<td>1</td>
<td>- use MORET to manage the database of the models.</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>- Software Requirements</td>
<td>- load datasets with the MORET-GUI</td>
</tr>
<tr>
<td>- Model Repository</td>
<td>- fit models to the data</td>
</tr>
<tr>
<td>- Model Comparison</td>
<td>- use MORET to manage the database of the models.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Working With Moret

- load datasets with the MORET-GUI
- fit models to the data
- use MORET to manage the database of the models.
  - export model data
  - use the Model Explorer

Working With Moret/2

```r
Welcome to MORET
read.table("/Users/ralfseger/Documents/workspace/StatisticalModels/data/election.txt",header=TRUE);
All Objects removed from workspace.
save(file="/Users/ralfseger/Documents/workspace/StatisticalModels/data/election.txt",election.txt)
attach(election.txt)
```

Managing Large Sets Of Models

Outline

1. Introduction
2. Managing Models
   - Software Requirements
   - Model Repository
   - Model Comparison
Preselect Models

- Models space is huge.
- Work with selected subsets of all models.
Introduction
Managing Models
Summary
Software Requirements
Model Repository
Model Comparison

Model Overview Options

Working with the Model Table
- inspect a single model
- view the creation script
- export models

Actions
dynamically select attributes of the stored models
use predefined profiles (e.g., for all coefficient values)

Model Explorer

Options
- data management commands
  - rename selected model entries
  - delete selected rows
- export models

Actions
dynamically select attributes of the stored models
use predefined profiles (e.g., for all coefficient values)
Managing large sets of models is possible using MORET. MORET can be used as a link to other applications for further analysis.

Further developments:
- Integration of more model alternatives
- Better control of transformed variables
Managing large sets of models is possible using MORET
MORET can be used as link to other applications for further analysis

Further developments
- Integration of more model alternatives
- Better control of transformed variables

R. Seger
project homepage.
http://stats.math.uni-augsburg.de/software/.