

Making Sense of (Multi-)Relational Data

Part VI: Perspectives

Jefrey Lijffijt

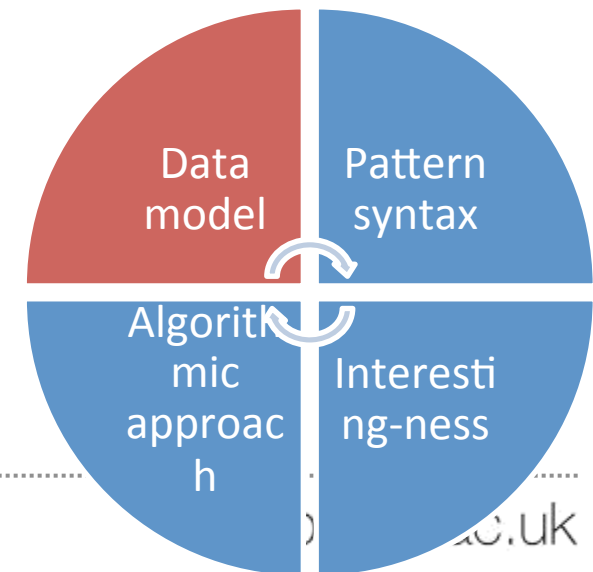
Eirini Spyropoulou

Tijl De Bie

General Conclusions and Recommendations

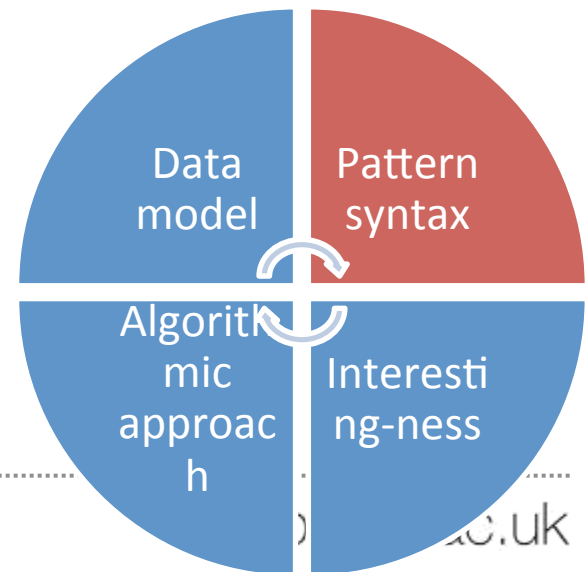
General conclusions and recommendations

- Data types
 - Entity-relationship data model is 'richest'?
 - Simpler models useful in practice
 - Integration with OLAP?



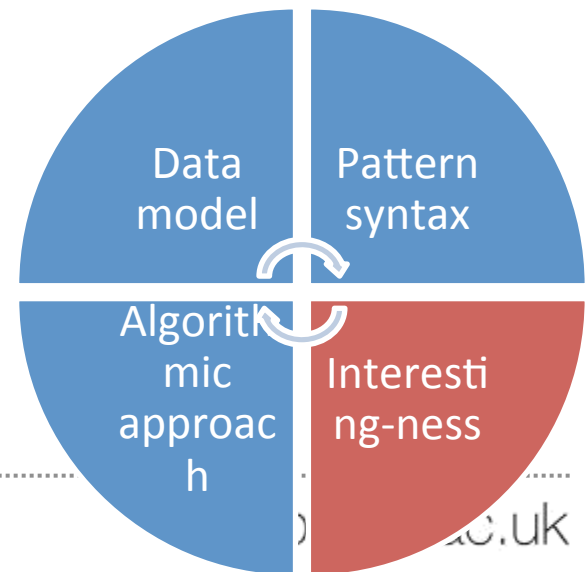
General conclusions and recommendations

- Pattern syntax
 - Targeted versus exploratory
 - Global versus local



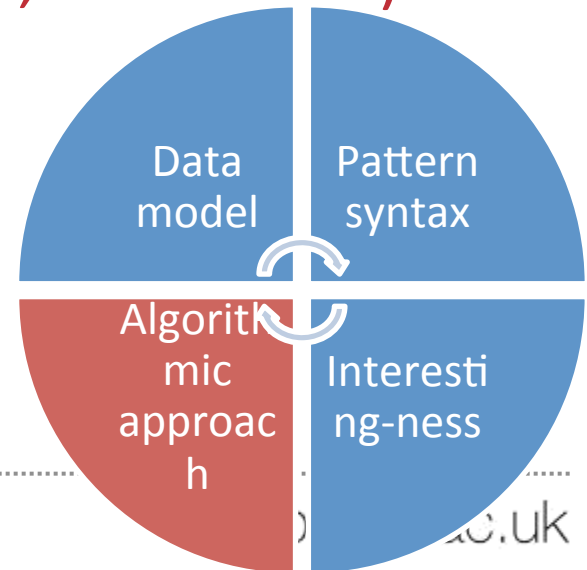
General conclusions and recommendations

- Interestingness:
 - **Most work on objective measures**
 - Often the right approach for targeted approaches
 - **Very little work on subjective**
 - Harder to formalise
 - Still, often more useful for exploratory approaches



General conclusions and recommendations

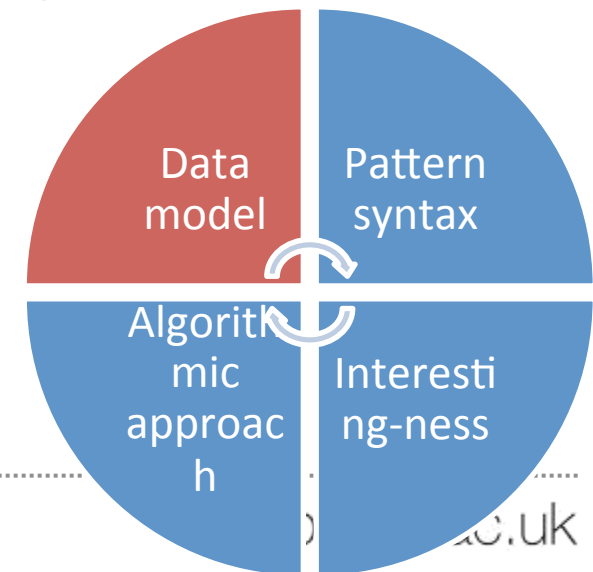
- Algorithmic approach
 - Aim (single best, top-k, ...)
 - User experience (one shot, iterative, interactive)
 - Search strategy (levelwise, ...)
- Flexibility comes at a price



Open Problems and Opportunities

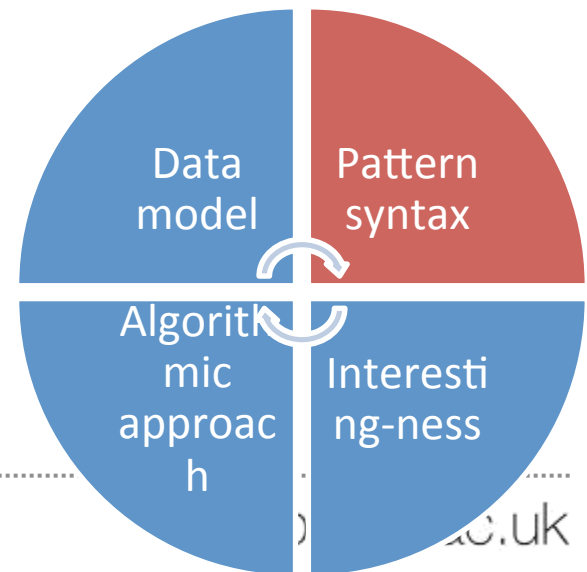
Open problems and opportunities

- How to model/represent the data?
 - Similar to data modelling problem in RDBS design
 - Choice of data representation is part of pattern syntax, but not in a transparent way
- Linked data!



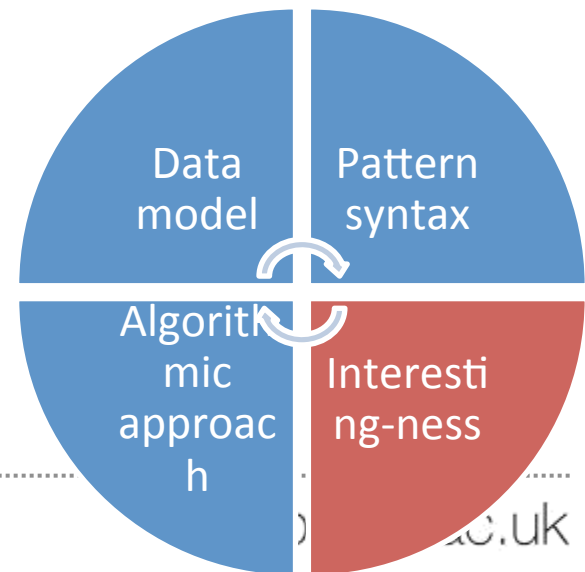
Open problems and opportunities

- How to compare patterns of different syntaxes?
 - Usefulness?
 - Interpretability?
 - Match with interestingness?
 - Computational feasibility?



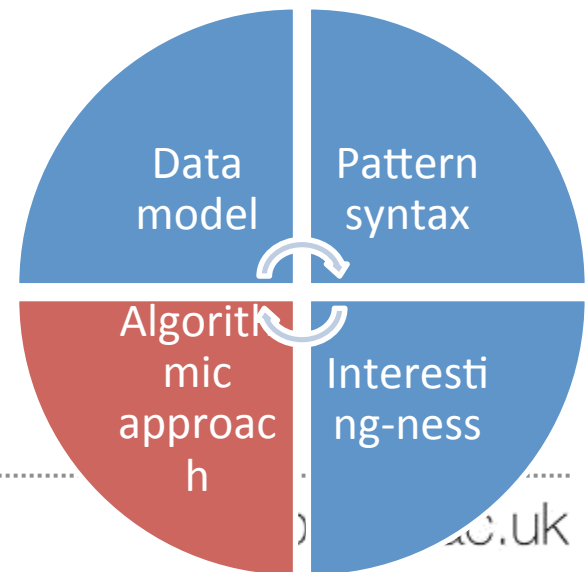
Open problems and opportunities

- Generic frameworks for modelling interestingness?
 - **Subjective**
 - W.r.t. some kind of user model
 - **Objective**
 - Given a specific target
 - Given a physical model
 - Given a utility model



Open problems and opportunities

- Algorithmic approaches
 - Anytime algorithms?
 - Hadoop/... implementations?
 - Study of theoretical computational complexity, approximability, etc.



Open problems and opportunities

- Implementation aspects
 - Algorithms that run on the database, versus
 - Algorithms in Matlab



European Research Council

Established by the European Commission



Thanks – questions?