Yet Another Approach To Model Merging

very short version

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September 16, 2008

Who - Where - What

- Diploma thesis

  "A Framework for analysis and transformation of MOF models"
- National Technical University of Athens

  School of Electrical and Computer Engineering
- Supervisor:

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An Algebra for Models

- MOF models, seen as directed, typed, attributed graphs
- Model operations:
  - **merging**
  - **differencing**
  - matching
  - splitting
  - ...
- "A manifesto for model merging"

  (Brunet, Chechik, Easterbrook, Nejati, Niu, Sabetzadeh)

Merging and Differencing

- "An algebraic framework for merging incomplete and inconsistent views" (Sabetzadeh, Easterbrook)
- "Difference detection and visualization in UML class diagrams" (Girschick)
- Matching
  - Suppose it has already been computed
  - Simple 1-to-1 relations
  - No inconsistencies or dependencies

Flexible Matching Representation

- More complex relations
  - 1-to-many, many-to-many relations
  - Semantic dependencies, inconsistencies
- A way to handle them: Triple Graph Grammar rules
- "Triple graph grammars: Concepts, extensions, implementations, and application scenarios" (Kindler, Wagner)

Merging with TGG Rules

- Required inputs
  - A set of complex relations (ie the matching)
  - A set of TGG rules
  - A rule application mechanism
- "Model Transformation with Triple Graph Grammars" (Konigs)
- End up with simply connected models
- Open issues: Model matching, Rule creation and generation, Rule application