Toward Interactive Relational Learning

Ryan Rossi
Palo Alto Research Center
rrossi@parc.com

Rong Zhou
Palo Alto Research Center
rzhou@parc.com

Interactive Relational Machine Learning (iRML) paradigm allows users to interactively design relational models by specifying the various components, constraints, and relational data representation, as well as perform evaluation, analyze errors, and make adjustments and refinements in a closed-loop.
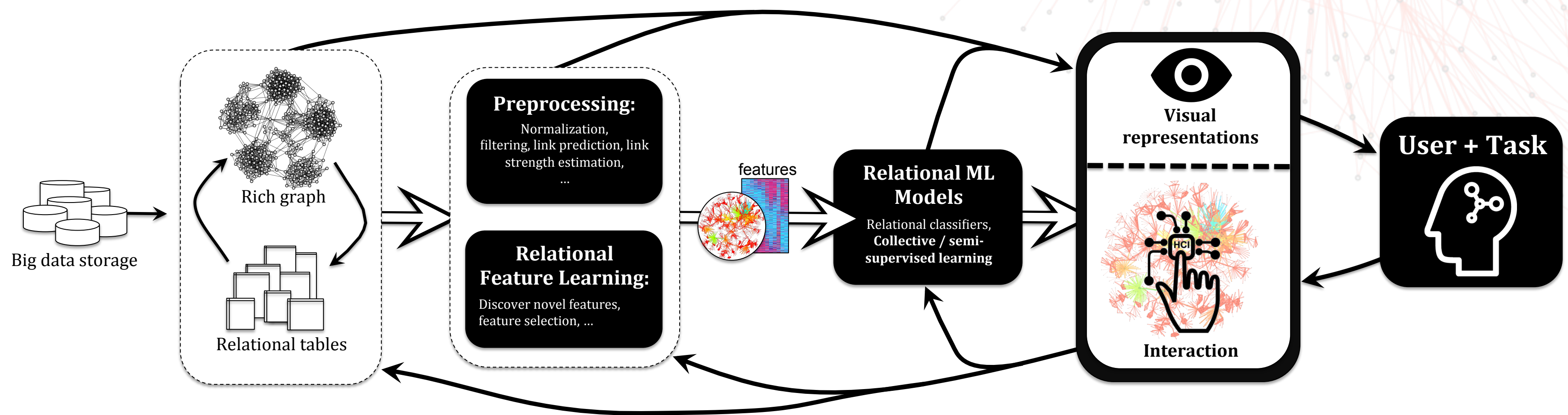
Interactive relational classification

Cora

Gene classification
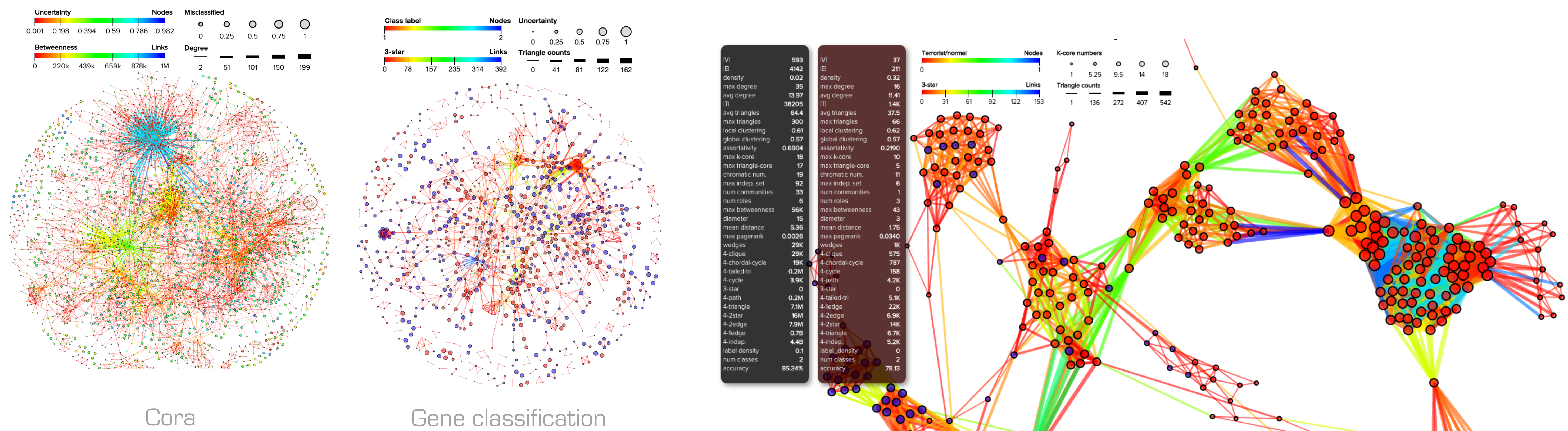
Interactive RML

- Direct manipulation of the various components of the RML method.
- Visual representation and interaction techniques are also developed for exploring the space of relational models and the trade-offs of the various components and design choices.

Terror relationships

Real-time interactive learning

- Fast linear time learning and inference methods
- Extremely space-efficient
- Parallelized

Interactive Collective Factorization

- Link prediction
- Estimating relationship strength
- Network modeling
- Role discovery
- Graph-based anomaly detection
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