Privacy in Cooperative Distributed Systems: Modeling and Protection Framework

by

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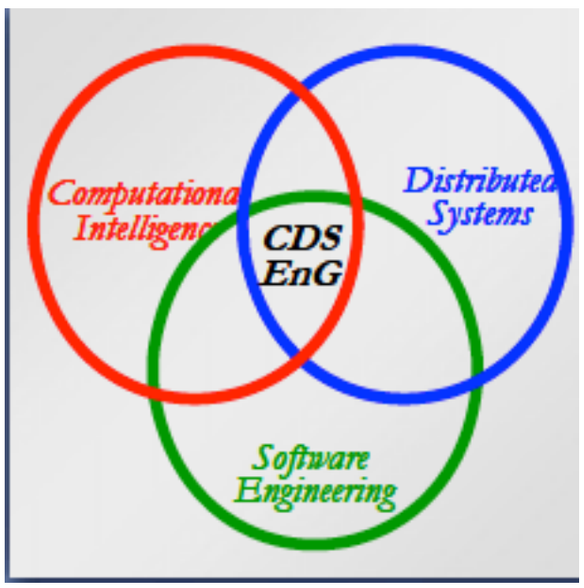
- Reaction Paper 1



Western

ECE9607 - Xinyu Yun

“Privacy” as a fundamental computation concept in CDS paradigm

- Privacy in Distributed System
  - privacy is a concern when the setting of the environment is decentralized.
- Privacy in Cooperative Distributed System
  - the prospects are tailored towards particular setting of the environment where a certain type of information is exchanged in the interaction of entities.

Privacy in Distributed System

- Authorization Framework
- Multiple Data Sources - Linking and aggregation
- Distribute Constraint Satisfactory - identified by 4 levels
  - Agent, Topology, Constraint, and Decision
- Multiple Agent System Management - three approaches
  - Policy-based, Privacy Utility Tradeoff

Reaction

- Traditional Vs DS
- Data becomes ‘bigger’: Volume, Velocity, Variety
- Privacy computation and management can be introduced in different levels and approaches.

Privacy in Cooperative Distributed System

- Auction Mechanisms
- Risk Analysis in Interaction in terms of:
  information sensitive, information receiver, and information usage
- Targeting Advertisement - Trusted Third Party to encrypt

Reaction

- independent privacy from other roles
- privacy in interaction - covered by infrastructure and API level
- customer information security - Third party solution

Conclusion

Privacy has been evaluated in many research subjects such as authorization mechanisms, publishing data sources, Multi Agent Systems, Distributed Constraint Satisfaction Problem, auction mechanisms, risk assessment and targeting advertisements.

Next Step

- Privacy models in CDS and management framework