

# SARNET Alliance

Ameneh Deljoo

University of Amsterdam

*a.deljoo@uva.nl*

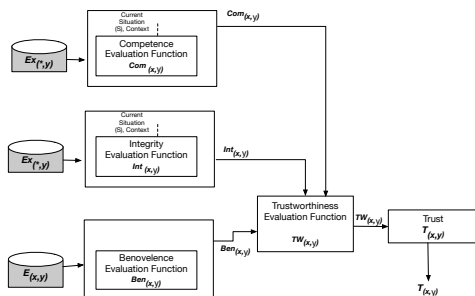
June 1, 2018

## 1 Social Computational Trust Model (STM)

- The impact of competence and benevolence in a computational model of Trust
- Towards Trustworthy Information Sharing by Creating Cyber Security Alliances

## 2 Ongoing Work

# The impact of competence and benevolence in a computational model of Trust

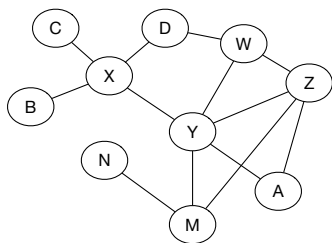


## Trustworthiness Function

- $Competence_{(x,y)} \in [0, 1]$
- $Benevolence_{(x,y)} \in [0, 1]$
- $Integrity_{(x,y)} \in [0, 1]$
- $T(x; y) \in [0, 1] : Ben(x, y) \times Com(x, y) \times Int(x, y)$

# Computational Trust Model

- Hypothesis: Close and long-term relationships have a direct impact on the competence and benevolence of partners.
- Context =
  - $d_1$  = trustor
  - $d_2$  = trustee
  - $d_3$  = time
  - $d_4$  = location
  - $d_5$  = task
  - $d_6$  = complexity
  - $d_7$  = deadline
  - $d_8$  = Outcome



[Deljoo et al., Trust Management, 2018]

# Towards Trustworthy Information Sharing

- STM to create and manage trust among the members,
- SPG Framework as a federated governance model, creating common policies, standards for alliances members, and
- Common benefits to provide a strong incentive to partners to join an alliance.

[Deljoo et al., Trustcom, 2018]

## Trust, Norms and Sanctions

- Integrity-based component that analyzes all past evidence on the agent under evaluation and estimates his overall integrity.
- Updating the trust value based on the applied sanction to the non-compliance member.

## SARNET Team Collaboration

- Deciding with whom to cooperate based on the current trust levels.
- Updating the trust levels based on the cooperation experience.



Ameneh Deljoo, Tom van Engers, Ralph Koning, Leon Gommans, and Cees de Laat,

“Towards Trustworthy Information Sharing by Creating Cyber Security Alliances”

*The 17th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom-18), New York, USA ,July 31th - August 3rd, 2018.*



Ameneh Deljoo, Tom van Engers, Leon Gommans and Cees de Laat,

“The impact of competence and benevolence in a computational model of Trust”

*The 12th IFIP International Conference on Trust Management 2018, 9-13 July Toronto Canada.*

# The End