



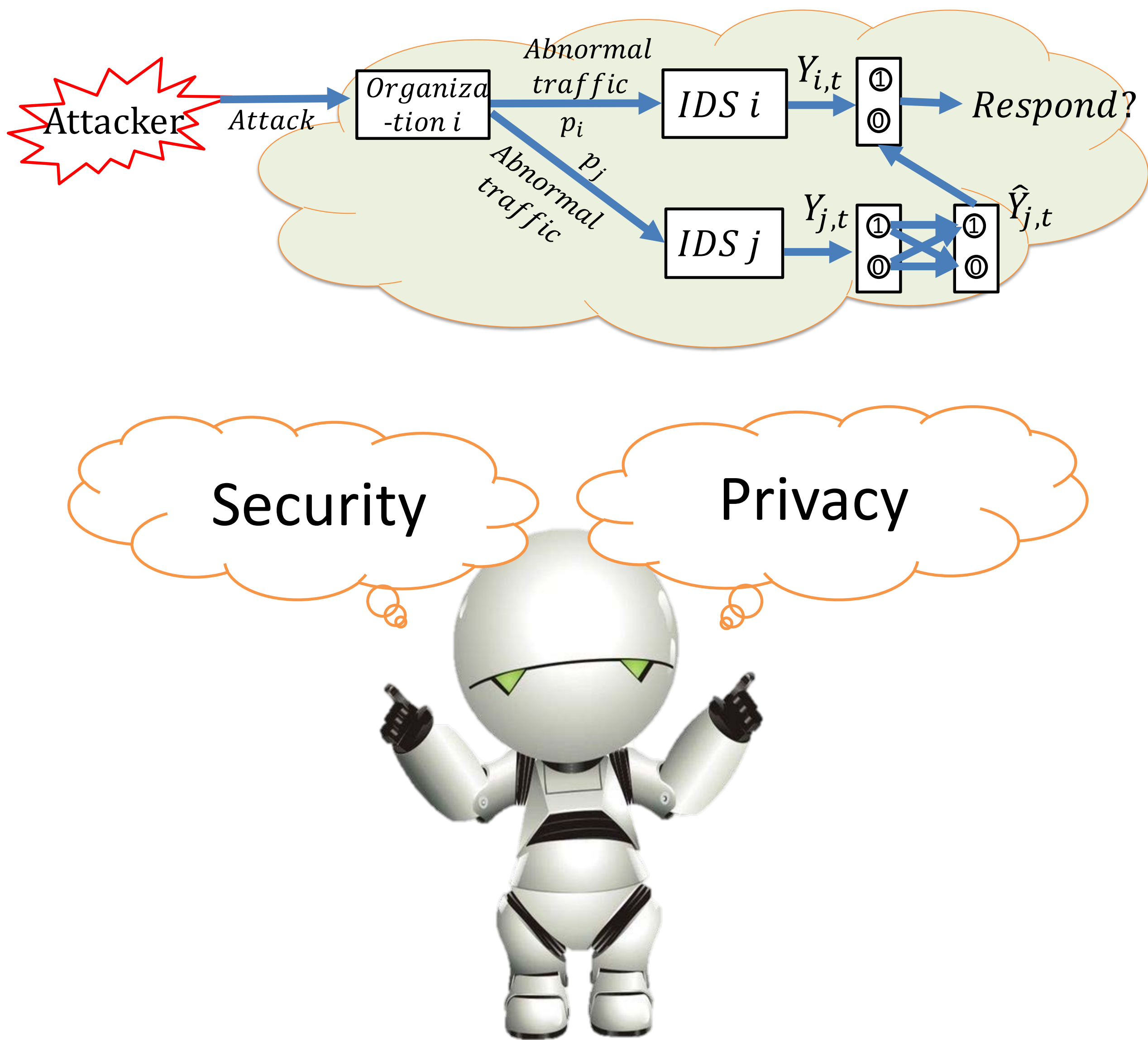
On the tradeoff between Utility and Privacy in

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Collaborative Intrusion Detection Networks

Security Metrics-Driven
Evaluation, Design,
Development, &
Deployment

Collaboration raises privacy concerns



Innovations & Uniqueness

- A new privacy-preserving collaboration scheme
 - Quantitative utility-privacy tradeoff analysis
 - Flexible in meeting the pre-specified privacy requirement
- Propose new algorithm which can
 - Optimal collaboration strategy & response strategy

Technical Approach

- Repeated single-leader multi-follower game
 - Stackelberg-Nash Equilibrium (SNE)
 - Learn optimal response strategy
- Utility-privacy tradeoff game
 - Determine optimal collaboration strategy

Benefits & Deliverables

- More effective IDS collaboration
 - Utility-privacy tradeoff curve
 - Guidelines for choosing collaboration strategy
- Help collect real data, so we can
 - Evaluate proposed algorithm



Science of Security
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