

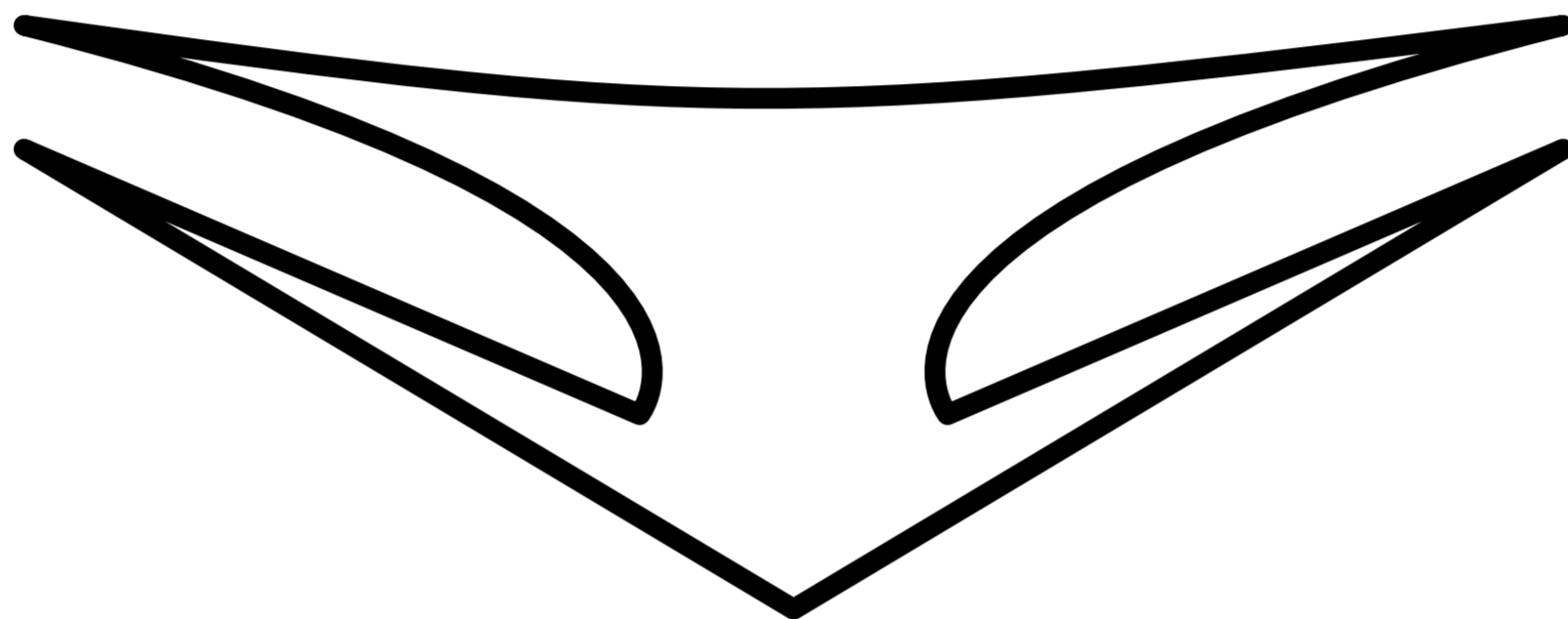
A New Approach to Security Games

UCT

- Optimal deterministic strategy
- Monte-Carlo based
- Perfect information games
- Fast
- Scalable
- Used for many board games

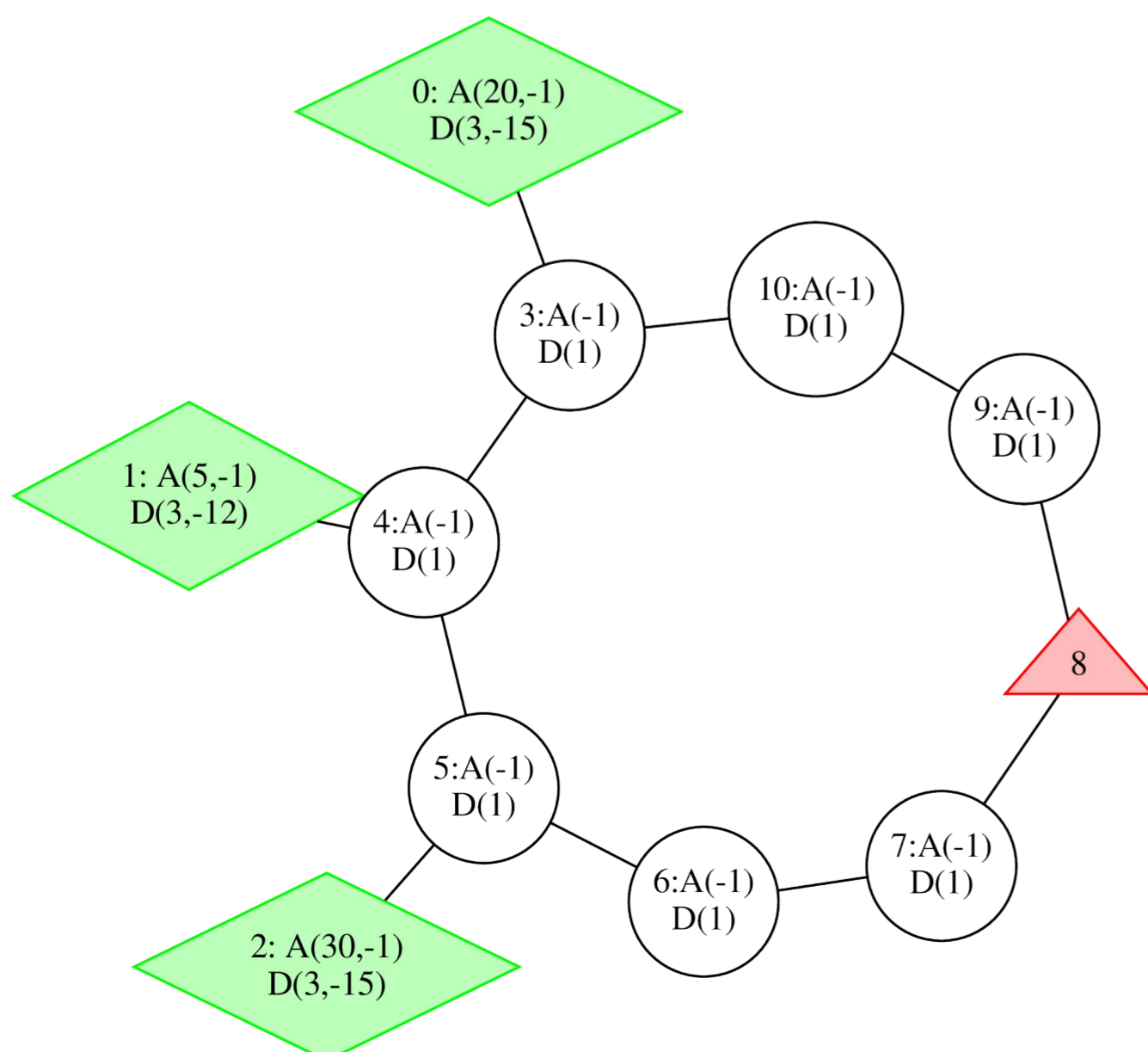
Security Games

- Imperfect information
- Asymmetric (defender vs attacker)
- Usually a Stackelberg Game
- Deployed in real problems
- Well known approaches
- Mixed strategies
- Optimization problem solutions
- Bounded rationality
- Limited modelling abilities



Games on a graph

- Scalable enough to play multi act games
- Easy simulation of different attackers' weaknesses
- Easy modification of game model (length, information, rules)
- Quick training
- Optimal deterministic strategy



Possible extensions:

- Mixed strategy
- Dynamic adaptation do different attackers
- Bounded rationality modelling
- Joining with heuristics

