Privacy-Preserving AIS for Network Security

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Problems with previous topic

- Could not find data with similar attributes for similar diseases
- Previous papers only use single disease data or dissimilar data
- Could not find a significant gap

- Recall: LISYS [1] is a popular network security AIS for LAN
- Each node has its own set of detectors
- Gaps -
  - Assumes a broadcast network to broadcast SYN packets
  - Privacy of connections to nodes not maintained
  - Detectors are not mobile

- Privacy-preserving shared immune system
- Connections to individual nodes not known by others
- However, this information is secret-shared for training

- Mathematical formulation/pseudocode of LISYS
- Selection of parameters for the AIS (eg: Affinity function)

Steven A Hofmeyr and Stephanie Forrest.
Architecture for an artificial immune system.
Evolutionary computation, 8(4):443–473, 2000.