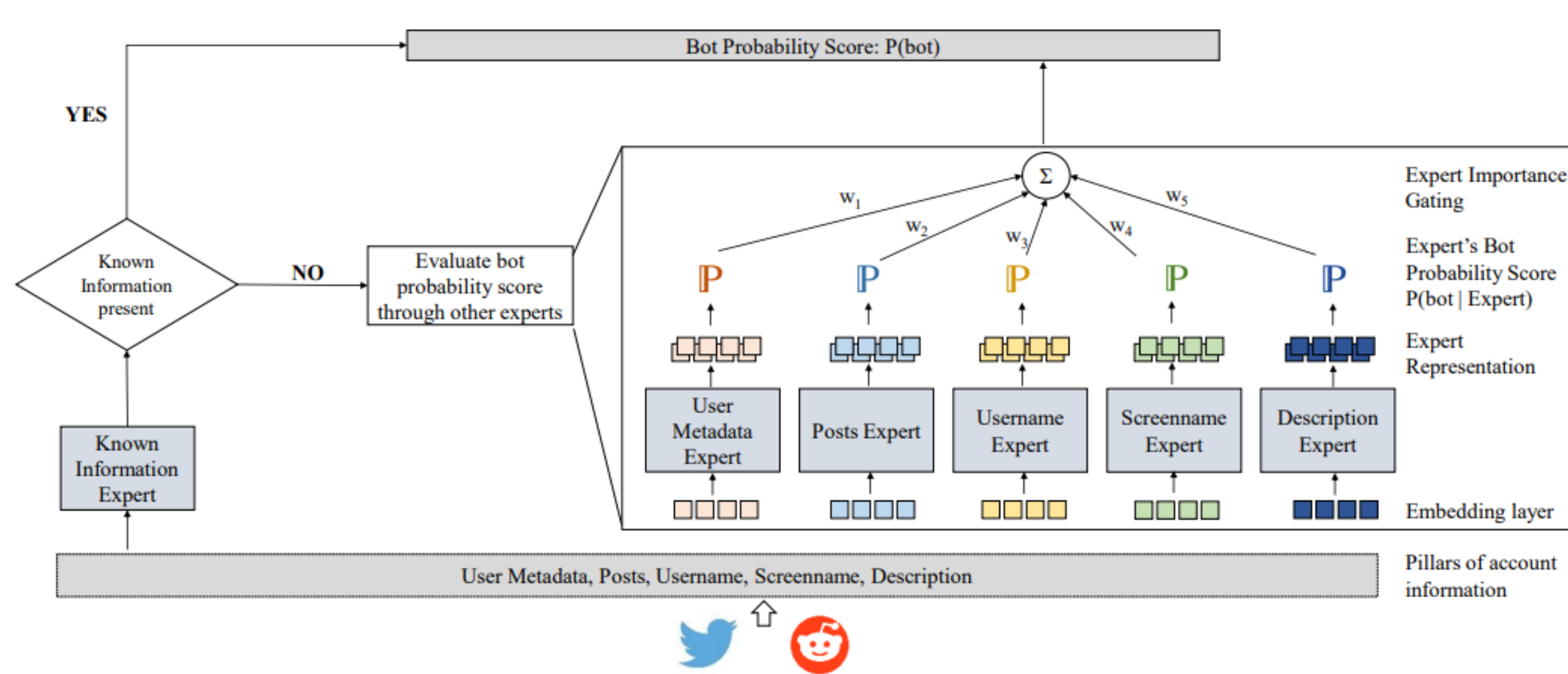


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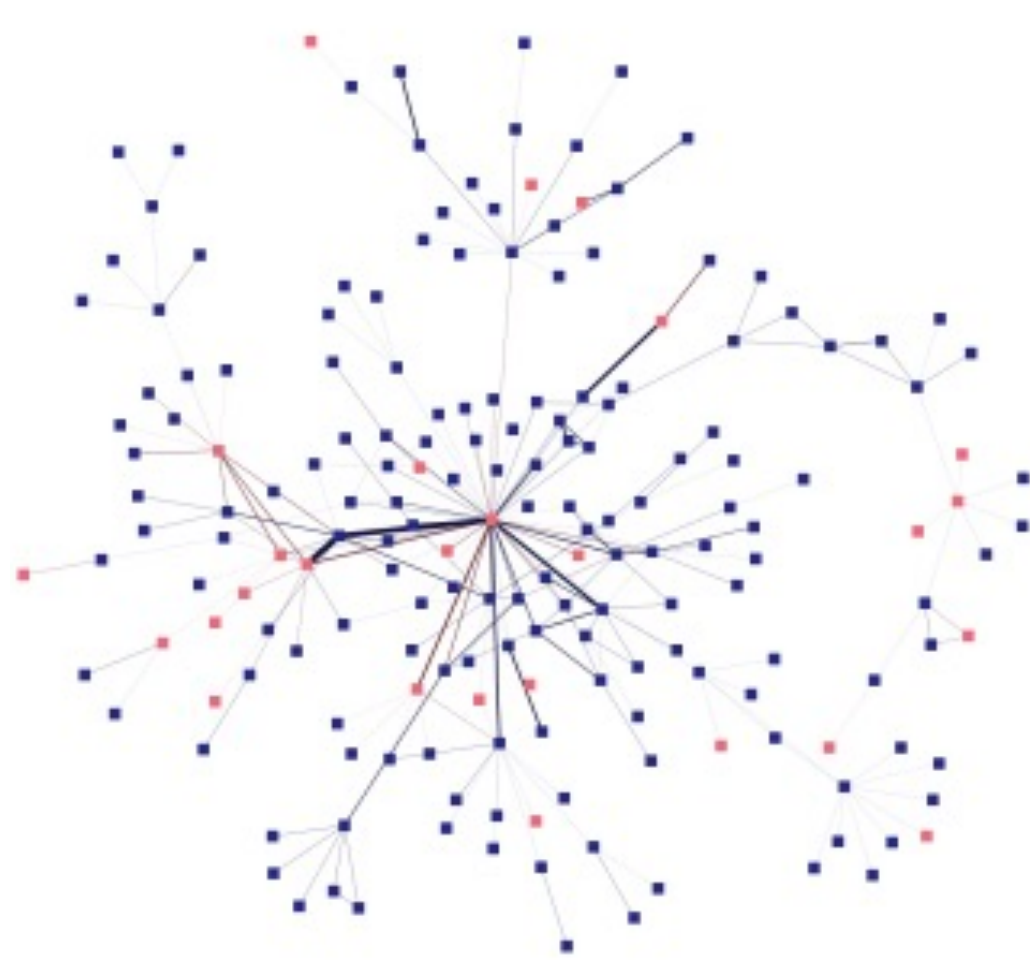
## BotBuster: Mixture of Experts Bot Detection Model

- Multi-platform, input invariant
- Deals with incomplete data by separate probabilities for each data type
- Incorporates known information as heuristics



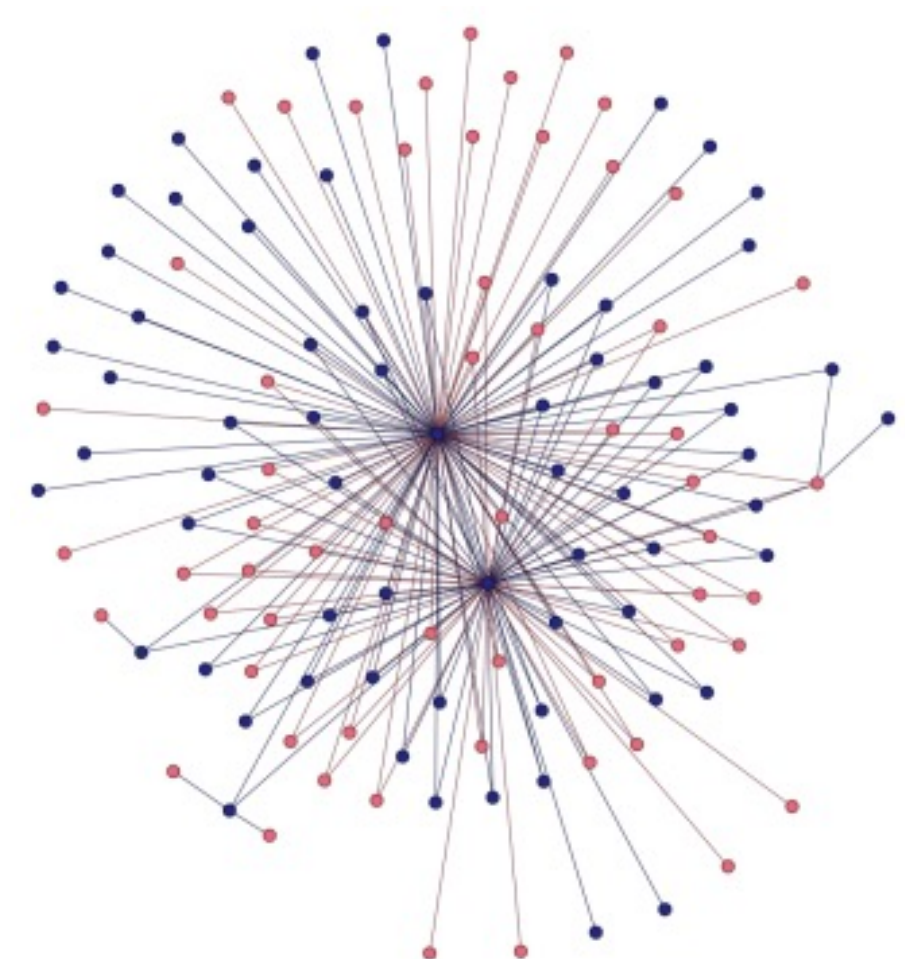
## BotNetworks: Identification through synchronized network structures

- Bots can work in teams
- Temporal Synchronicity: retweeting each other within 5 minutes



Red: identified bots  
70% of this network were suspended a year later

- Narrative Synchronicity: 80% of the main text are the same



Red: identified bots  
57% of this network were suspended a year later

## Types of Bots

**Self Declared Bots:**  
Contain the word "bot" in user information

**Common Bots:** More than one identify user as bot

**Cyborgs:** Human with automation or bot with human input

**News Bots:** Serve up original news or aggregate news

**Announcer Bots:** Serve up announcements periodically or by a trigger

**Amplifier Bots:** Boost narrative themes, influence of other accounts, overload others with content

