The mass, fake news, and cognition security

Bin GUO, Yasan DING, Yueheng SUN, Shuai MA, Ke LI, Zhiwen YU

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Problems & Ideas

- Problems of the potential impacts of fake news on human cognition
  - Misperception
  - Untrusted knowledge acquisition
  - Targeted opinion/attitude formation
  - Biased decision making
- Ideas: Cognition Security (CogSec)
  - Human-content cognition mechanism
  - Social influence and opinion diffusion
  - Fake news detection
  - Malicious bot detection

- **Some types of false information**

Term	Definition
Rumor	" An item of circulating information whose veracity status is yet to be verified at the time of posting."
Hoax	" A deliberately fabricated falsehood made to masquerade as truth."
Click-bait	" A piece of low-quality journalism which is intended to attract traffic and monetize via advertising revenue. "
Disinformation	" Fake or inaccurate information which is intentionally false and deliberately spread."
Misinformation	" Fake or inaccurate information which is unintentionally spread. "
Fake news	"A news article that is intentionally and verifiably false. "

- **CogSec extends the security paradigm**

Term	Research Focus	Security Paradigm
Network security	Data and content security	Machine security
Cognitive security	Digital devices security	Machine security
Cognition security	The interaction and cognition mechanism between human and contents in the cyberspace	Human-machine security

Main Contributions

- Characterizing the CogSec research area, ranging from its conceptual model to research scope.

- Investigating the main research challenges of CogSec, and presenting the state-of-the-art techniques to address them.

- Discussing open issues and future research directions of CogSec.
  - The cognition mechanism of fake news
  - Explainable fake news debunking
  - Fast refutation of fake news