ALPACA: A Lightweight Platform for Analyzing Claim Acceptability

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Motivation

- There are a lot of confusing and untrue claims on the Internet
  - “Barack Obama is a radical Muslim”
  - “John McCain is not a natural-born United States citizen.”
- Misinformation impacts “real life”
  - 10% of people still believe Obama is a Muslim
  - 45% of respondents are less likely to vote for a Muslim for president

Motivation

- Problem is often not too little information, but too much. We need to organize it.
- Users want to see a “true” or “untrue” answer... but they also want to explore evidence
- Users want to see relationships of claims
  - Which claims imply others
- Users want to see sources of claims
  - Who said what
  - Reputation of speaker

Our Paper

- Identify general drawbacks in existing systems and methods
- Propose new principles for research direction
- Describe ALPACA, a work in progress that adheres to these principles

Drawbacks of Current Approaches

- Too Centralized
  - Many people receive political information from traditional media sources, even when online (e.g., CNN.com)
  - Many people trust very few sites
    - Media manipulation and story selection have better risk / reward ratio
    - We see only a few biased viewpoints, resulting in polarization
  - Democratized sites self-select and acquire bias

Drawbacks: Lack of Automation

- Manual Creation
  - Snopes and Factcheck are great
  - ...but they cover only the most popular stories
- Manual Consumption
  - Look at information from multiple levels
    - High: Is there any basis whatsoever for this claim? What is the estimated probability?
    - Low: Who said what, when, why do we believe that?

Drawbacks: Lack of Automation

- No Meta-Analysis
  - Not just “is this claim true?”
  - Speculation: “If this claim were not true, how does that impact the credibility of this other claim?”
  - “Which media sources tend to give credible information?”
  - “Which biases do particular sources represent?”

Drawbacks: Lack of User-Centrism

- Assumption of objective truth: global credibility value
  - If I know a website is spam but Google doesn't, how can I impact PageRank?
- Value may not be sufficiently nuanced
- Focus on answer, rather than exploring details
  - No ability to look deeper interactively
  - Basis information is not given for meta-analysis

Design Principles or: Drawbacks^{-1}

- Systems should be peer to peer
  - Share information directly with peers
  - Computations by one peer should be repeatable by other peers
- Mostly automated
  - Human-generated input is ok, but it should avoid requirement of expert knowledge

Design Principles

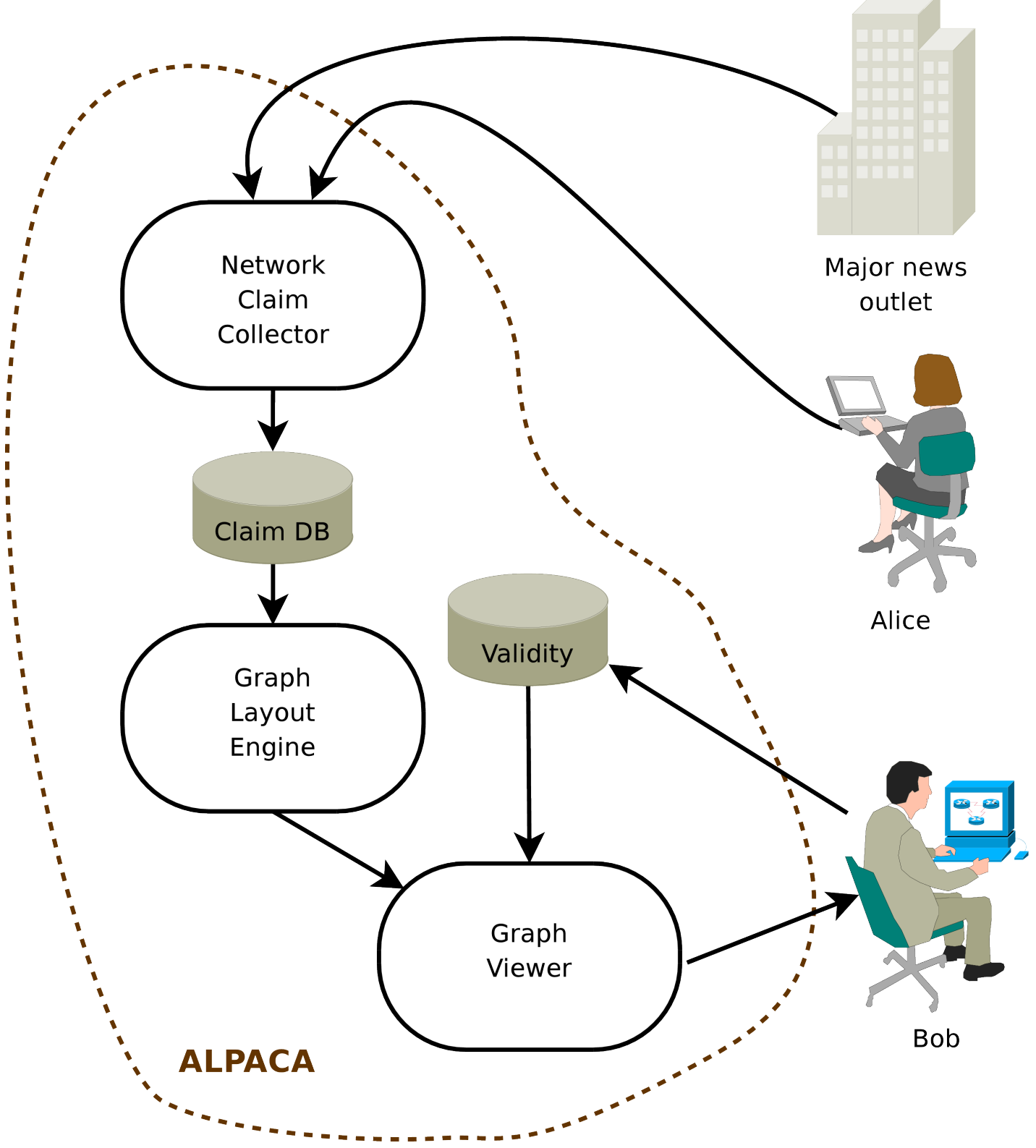
- Dual-access
  - Data should be readable by humans and computers
- User-centric
  - Users should be able to manipulate all inputs and the parameters of all computations

ALPACA

- Introducing ALPACA: A Lightweight Platform for Analyzing Claim Acceptability
- “Computer Pundit”
  - System for communicating, organizing, and presenting claims and metadata on those claims
  - Try to be clear and objective about assumptions, and therefore bias
  - Allow manipulation of assumptions to understand impacts

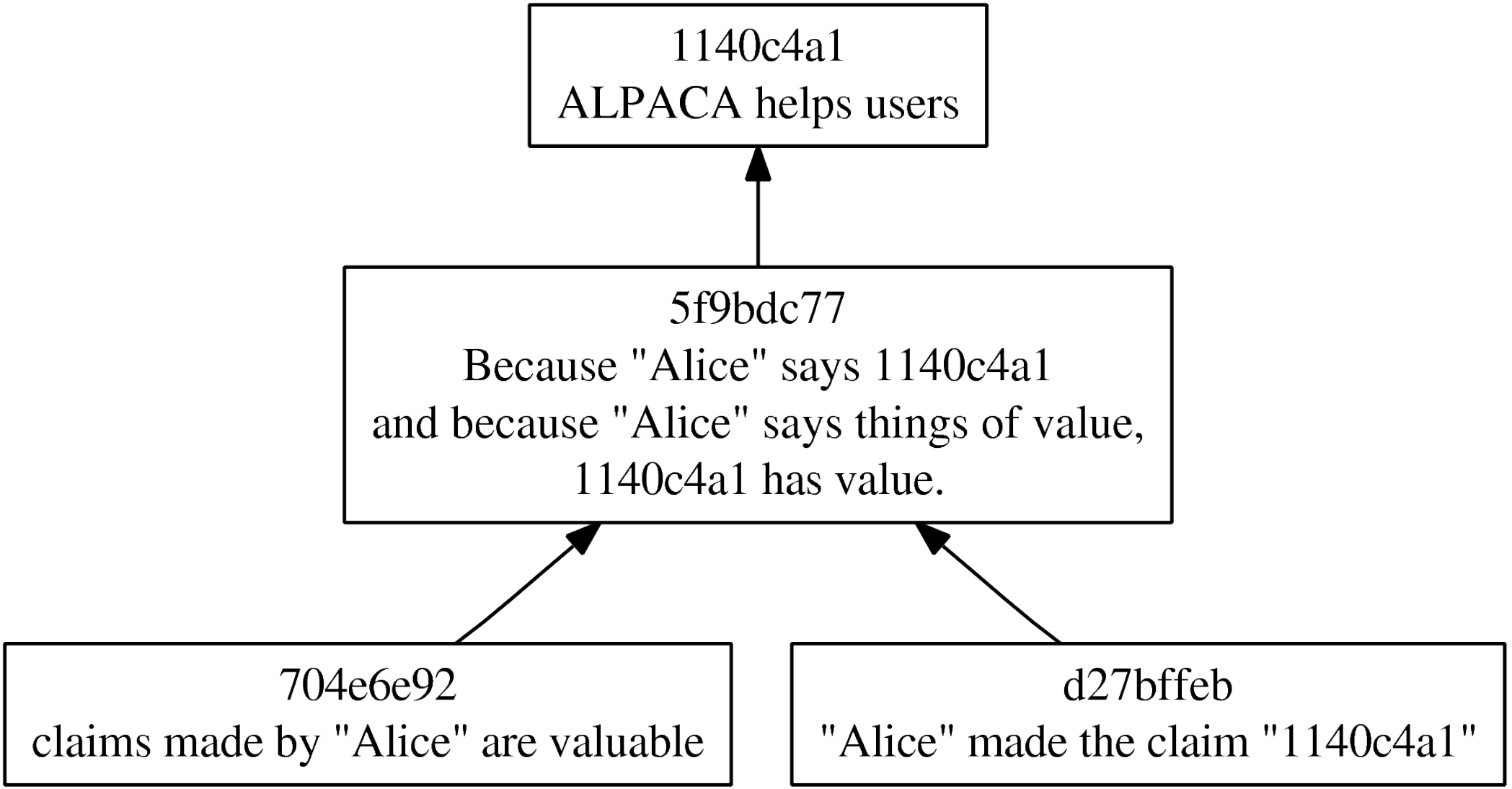
ALPACA Principles

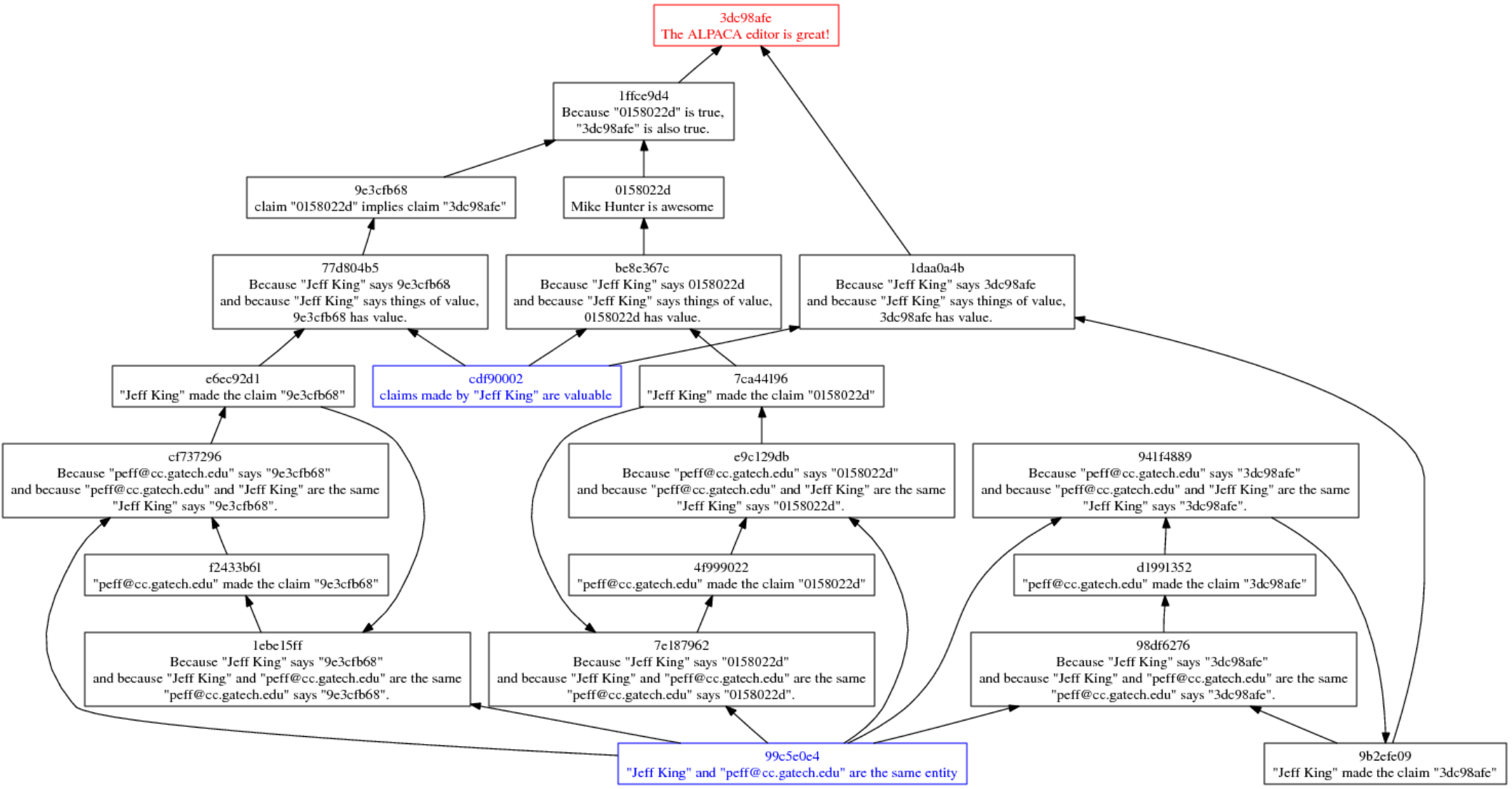
- Everything is a claim
- Validity of claims is in the eye of the individual.
- Some claims have semantic relationships, independent of their validity.
- Every claim can be the subject of another claim.

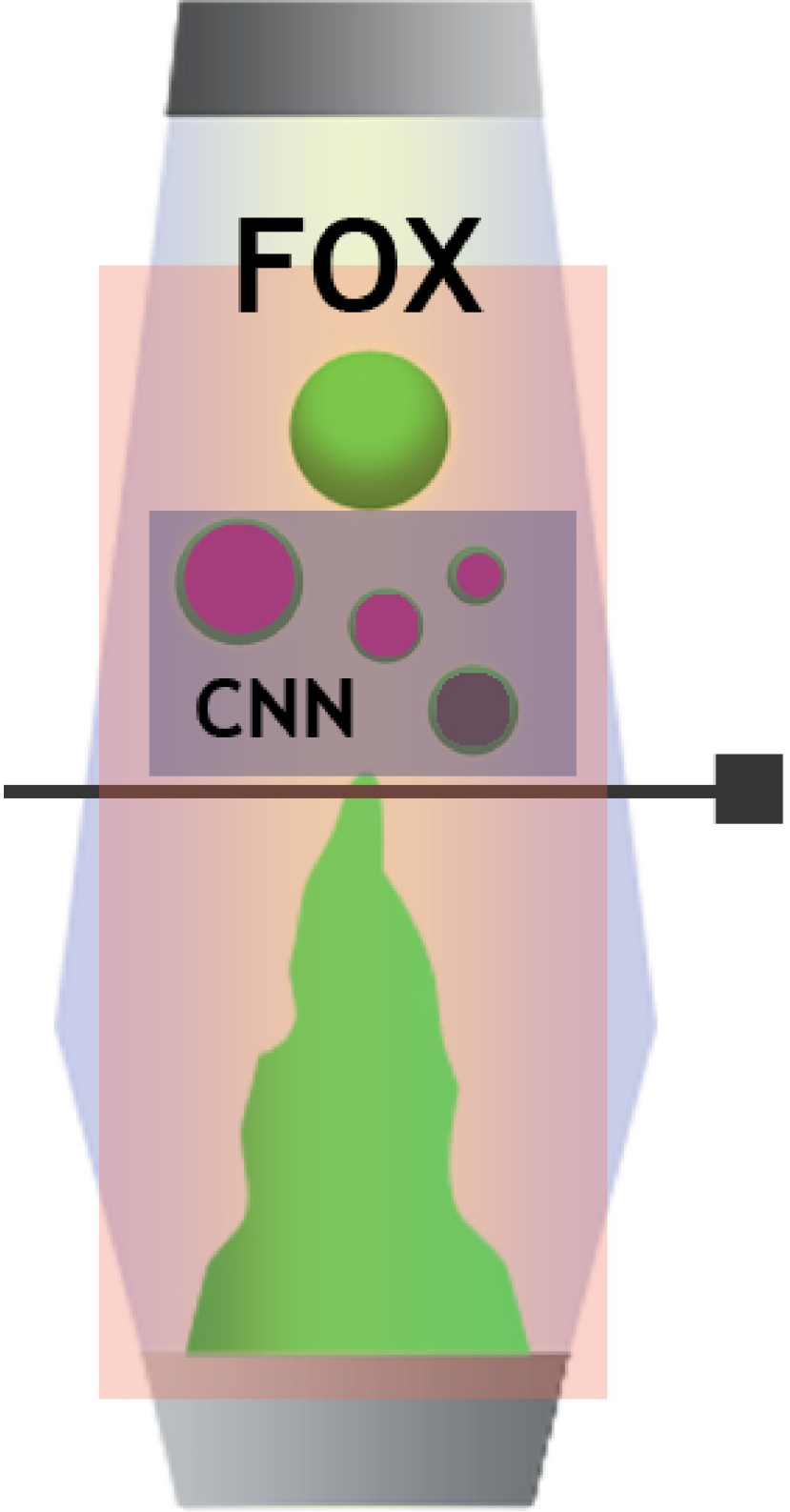

Network
Claim
Collector
Claim DB
Graph
Layout
Engine
Validity
Graph
Viewer
ALPACA
Major news
outlet
Alice
Bob

ALPACA Design

- Organize a directed graph
  - Nodes are claims
  - An edge from A to B indicates “flow” of validity from A to B
- Each claim is: (*type, arg1, arg2...)*
- Identify claims by hash of contents


1140c4a1
ALPACA helps users
5f9bdc77
Because "Alice" says 1140c4a1
and because "Alice" says things of value,
1140c4a1 has value.
704e6e92
claims made by "Alice" are valuable
d27bffeb
"Alice" made the claim "1140c4a1"


3dc98afe
The ALPACA editor is great!
1ffce9d4
Because "0158022d" is true,
"3dc98afe" is also true.
9e3cfb68
claim "0158022d" implies claim "3dc98afe"
0158022d
Mike Hunter is awesome
77d804b5
Because "Jeff King" says 9e3cfb68
and because "Jeff King" says things of value,
9e3cfb68 has value.
be8c367c
Because "Jeff King" says 0158022d
and because "Jeff King" says things of value,
0158022d has value.
1daa0a4b
Because "Jeff King" says 3dc98afe
and because "Jeff King" says things of value,
3dc98afe has value.
e6ec92d1
"Jeff King" made the claim "9e3cfb68"
cdf90002
claims made by "Jeff King" are valuable
7ca44196
"Jeff King" made the claim "0158022d"
cf737296
Because "peff@cc.gatech.edu" says "9e3cfb68"
and because "peff@cc.gatech.edu" and "Jeff King" are the same
"Jeff King" says "9e3cfb68".
e9c129db
Because "peff@cc.gatech.edu" says "0158022d"
and because "peff@cc.gatech.edu" and "Jeff King" are the same
"Jeff King" says "0158022d".
941f4889
Because "peff@cc.gatech.edu" says "3dc98afe"
and because "peff@cc.gatech.edu" and "Jeff King" are the same
"Jeff King" says "3dc98afe".
f2433b61
"peff@cc.gatech.edu" made the claim "9e3cfb68"
4f999022
"peff@cc.gatech.edu" made the claim "0158022d"
d1991352
"peff@cc.gatech.edu" made the claim "3dc98afe"
1ebc15ff
Because "Jeff King" says "9e3cfb68"
and because "Jeff King" and "peff@cc.gatech.edu" are the same
"peff@cc.gatech.edu" says "9e3cfb68".
7e187962
Because "Jeff King" says "0158022d"
and because "Jeff King" and "peff@cc.gatech.edu" are the same
"peff@cc.gatech.edu" says "0158022d".
98df6276
Because "Jeff King" says "3dc98afe"
and because "Jeff King" and "peff@cc.gatech.edu" are the same
"peff@cc.gatech.edu" says "3dc98afe".
99c5e0e4
"Jeff King" and "peff@cc.gatech.edu" are the same entity
9b2efe09
"Jeff King" made the claim "3dc98afe"



Repub	Green Peace	ICANN	MSR
Libert	Dems	FOX	CNN

Going Forward

- Encourage others to consider our design principles when building systems
- ALPACA is still in its infancy
  - Details to be worked out in flow of validity
    - Possible graph reformulation using weighted edges
  - Rudimentary interface for walking graph manually
  - User-friendly interface is in early design stage
  - Writing plugins to gather claim nodes from automated events

Thank you!

Questions?