

Scalable Web Page Entanglement

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Outline:

- Problems with existing web
- Web page entanglement via proxies
- Making it scalable

Problems with existing web

- One-way links:
Page A links to page B , but B does not link to A
- Static links:
Owner of Page A must explicitly add/remove link to page B
⇒ A 's owner must know about B and decide B is relevant
- Ignores web usage patterns
- Broken links?
 - Fragile links are *the key* to the web's scalability
 - We are not trying to fix this “problem”

Web page entanglement via proxies

- Web-based proxy filters pages (like Google Translation)
- Wraps links to point back to proxy
- Tracks popular entry and exit links
- Tracks *association* links
 - What pages do users associate with this page?
 - Links between pages that do not link each other at all
 - Search to exit or URL to exit

Making it scalable

- Goal: Add and remove proxies dynamically
- Each page delegated to an expert proxy
- Hash page URL, hash proxy name, find closest proxy
- Wrap links so that closest proxy handles them
- Proxies learn about each other over time

Advantages

- Simple
- Works with existing browsers and servers
- Other approaches for web augmentation used modified browsers and servers
- Link maintenance automatic