

Decentralization of the Internet Workshop

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Dirk Kutscher and Lixia Zhang



Goals & Topics

- Investigation of the **root causes** of Internet centralization, and articulation of the impacts of the market economy, architecture and protocol designs, as well as government regulations;
- **Measurement** of the Internet centralization and the consequential societal impacts; characterization and assessment of observed Internet centralization;
- New research topics and **technical solutions** for decentralized system and application development;
- Decentralized (cloud-independent) **distributed system design**;
- **Protocols and algorithms** for decentralized distributed systems; and
- **Decentralized security and trust architectures** and protocols for real-world Internet systems.

Program

Session 1: Keynotes

Session 2: Decentralized Systems

Session 3: Technologies for Decentralization

Session 4: Panel Discussion on Next Steps

Keynote

Cory Doctorow

<https://craphound.com/>

DIENSHITTIFY OR DIE!

How computer scientists can halt enshittification to make a new, good internet and condemn today's enshitternet to the scrapheap of history.



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Cory Doctorow: DISENSHITTIFY OR DIE!

“How computer scientists can halt enshittification to make a new, good internet and condemn today's enshitternet to the scrapheap of history.”

- Enshittification
 - a process in which the providers of online products and services changed their policies subtly and gradually over time
 - grabbing the control of user data for profitability
- Potential remedies and countermeasures
 - including removing the barriers for users to exit platforms
 - reinstalling the end-to-end principle in future application developments.



Keynote

Michael Karanicolas

UCLA Institute for Technology, Law and Policy

The Fediverse Papers:

Constitutional, Governance, and Policy
Questions for a New Paradigm of
Networking



Michael Karanickolas: The Fediverse Papers

“Constitutional, Governance, and Policy Questions for a New Paradigm of Networking”

- Overview of the history of digital speech and content governance
- Challenges in supporting effective content moderation in today’s Internet contexts
 - including issues around monetization, legislation, privacy,
 - need for governance mechanisms to meet users, content owners, and governments’ expectations.
- Importance of intentionality and a structured process
 - to identify the essential policy questions
 - to evaluate various design choices for the future of decentralized platforms.



Session 2: Decentralized Systems

Bluesky and the AT Protocol: Usable Decentralized Social Media

Martin Kleppmann, Paul Frazee, Jake Gold, Jay Graber, Daniel Holmgren, Devin Ivy, Jeromy Johnson, Bryan Newbold, Jaz Volpert

ReP2P Matrix: Decentralized Relays to Improve Reliability and Performance of Peer-to-Peer Matrix

Benjamin Schichtholz, Roland Bless, Florian Jacob, Hannes Hartenstein, Martina Zitterbart

On Empowering End Users in Future Networking

Tianyuan Yu, Xinyu Ma, Lixia Zhang

Session 3:

Technologies for Decentralization

Atomicity and Abstraction for Multi-Blockchain Interactions

Huaixi Lu, Akshay Jajoo, Kedar S. Namjoshi

Communication Cost for Permissionless Distributed Consensus at Internet Scale

David Guzman, Dirk Trossen, Jörg Ott

Towards a Decentralized Internet Namespace

Yekta Kocaogullar, Eric Osterweil, Lixia Zhang

Session 4: Panel

Decentralization of the Internet – Quo Vadis?

Cory Doctorow
craphound.com



Michael
Karanicolas
UCLA



Dan Massey
USC ISI
NSF



Paul Mockapetris
ThreatSTOP



Panel Discussion

- Articulated various next steps for countering Internet centralization.
- Identified the notion of enabling direct user-to-user communication
 - without reliance on third parties
- Required functionality to support that:
 - how to provide user owned identities
 - tools for user mutual authentications and secure communications.



More



- <https://dirk-kutscher.info/events/conferences-workshops/conext-2024-din-report/>
- <https://www.ietf.org/blog/acm-din-workshop-2024/>