A Decentralized Publication System for Open Science using Blockchain and IPFS

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Who am I?

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Open Access and Open Science

- Opened articles, data, methodology, peer review...
- Reduced cost to access science
- Reproducibility, transparency, rigor, fairness...
Science Publishers

- Oligopoly
- Infrastructure control
- Concentrate profits
- Impose policies (copyright, prices...)
Decentralized infrastructure
Centralized vs Decentralized
State of the art

- Open Peer Review
- Reputation Networks for reviewers
- Blockchain infrastructure:
  - Storage and voting of papers (Aletheia)
  - Timestamping publication (Ledger Journal)
  - Incentivized experiment reproduction
  - Post Publication Open Peer Review (Pluto)
Open access by design

Publishers infrastructure control
Provide free access keeping the infrastructure control. Impose rules such as charging authors (Gold Open access) or restricting dissemination (Green Open access).

Decentralized infrastructure
Academic documents are shared in a P2P network, granting Open Access by design and avoiding infrastructure control.
Transparent Governance

Publishers infrastructure control
Closed peer review communication.

Decentralized infrastructure
Open peer review communication, recording each interaction in a public, transparent and tamper resistant ledger.
Could change acceptance dynamics exposing unfair rejections.
Publishers infrastructure control
Reviewers quality and reliability is held private by publishers and journals (and even editors)

Decentralized infrastructure
A reputation system for reviewers opens reviewer quality information. Reviewers are rewarder for worthy, fair, and timely reviews, or penalized otherwise.
Discussion & conclusion

◇ New decentralized technologies such as Blockchain and IPFS could help to challenge the role of publishers and to realize Open Science and Open Access promises
Raised issues

- Privacy (blind reviews)
- Career pressure
- New technologies challenges (scalability, cost, inclusiveness ...)
- Data availability
Future Work and opportunities

- Alternative copyright models
- Alternative metrics
- Reputation systems
- Different levels of openness
- Decentralized Autonomous Journals
Thanks!

Any questions?

You can find us at:

- http://decentralized.science
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