### Sustainable Social Federated Curatorship

Michal Klodner

Vasulka Kitchen Brno 23.10. 2019

Organized networks are an alternative to the social media logic of weak links and their secretive economy of data mining. They put an end to freestyle friends, seeking forms of empowerment beyond the brief moment of joyful networking. This speculative manual calls for nothing less than social technologies based on enduring time. Analysing contemporary practices of organisation through networks as new institutional forms, organised networks provide an alternative to political parties, trade unions, NGOs and traditional social movements. Dominant social media deliver remarkably little to advance decision-making within digital communication infrastructures. The world cries for action, not likes.

Geert Lovink, Ned Rossiter, Organisation after social media, 2018

# **Documentation of art events**

- Event invitation, description
- Event discussion, related links
- Event photos
- all this is mostly on social network systems, they catch what disappears

evelopment from monolithic and isolated to modular and interoperable From standard-based archival description to limited curation tools Open research fields: critical editions collaborative research environments Archival Systems

> Development from monolithic and isolated to modular and interoperable From standard-based archival description to limited curation tools Focused on fixed established media

> > Open research fields: critical editions

collaborative research environments

personal curation

#### Sabine Himmelsbach (Director, Haus der Elektronischen Künste Basel)

From closed to open institutions : ... documentation plays a fundamental role in conveying the significant properties of a work and helping capture its stages and versions so that preservation decisions can be based on a firm understanding of the work, its functionality and its context.

Given the fluid characteristics of net-based and networked art, researcher Annet Dekker argues for a more speculative and process-driven preservation and speaks of "authentic alliances" (2018). "By emphasizing 'alliances' I want to uncover the core of net art, which is not always immediately visible, and address its implications. [...] What determines net art as authentic is found in relation to alliances. [...] Net art is a process, where different properties of the work, authorship, and time are in alliance with each other. This doesn't mean that questions about material, author, and time are irrelevant, but there is a shift of focus to questions relating to ownership, authorship and copyright." (2016).

I agree with her argument, that for a conservator—and also for other museum staff involved in preservation of works—this means "becoming part of a network of care in which a collaborative approach is important to comprehend the complexities of networked art." Conservation thus "is less about conserving materials and more about the preservation of social information and relations" (ibid.).

#### Howard Besser (NYU Tisch School of the Arts)

Aggregating all the photos and home movies of the digital diaspora is hugely more meaningful than single photo One tweet says very little, but thousands of tweets can show trends or depict a particular event or day

#### Oliver Grau (Danube University Krems)

Documenting Media Art: the Implementation of Social Web 2.0 Features

For the Archive of Digital Art (ADA), the first collective scholarly archive in art and media studies, documentation and access are not understood as static concepts, but as a process that integrates a continuous exchange between users, artists and experts. An archive with an open access policy that provides users with an active role and supports accessibility is more likely to be a lasting as well as an up-to-date resource. An essential aspect of the Interactive Archive and Meta-Thesaurus for Media Art Research (AT.MAR) was thus to transfer the ADA into a Web 2.0 environment and open it on the one hand on the 'retrievalside' by making the data available and easier to share for users and, on the other hand, on the 'archivist side' by allowing contributions of diverse individuals in order to facilitate a collaborative and more balanced preservation practice.

# 

Welcome to LURK, we host, facilitate and archive discussions around net- and computational culture and politics, proto- and post-free culture practices, (experimental) (sound) (new media) (software) art, and things like that...

- We're <u>volunteer run</u> and wish to:
- give the opportunity for individuals, groups and collectives working on net- and computational culture to have a presence outside of corporate silos, surveillance capitalism and closed facebook groups;
- offer a place where discussions and resources on self-hosting and alternative network infrastructures can exist outside of libertarian and pepe discourses;
- provide ourselves with something high-quality to procrastinate with, share good memes and eat pop-corn;
- etc.

collaborative document editing, moving image storage
corporate cloud platforms
free software, low power
(open) hardware

(2S

6)

ousands

orials of

© Facebook

So

0 L

inis

memorials of the

# Because of surveixance, social injustice, democracy damaging, hate speech, enormous energy consumption, proprietary centralisation on Facebook, Google, Amazon, Microsoft... ARTISTS DO NOT USE CORPORATE PLATFORMS

DOSTN

### The Concept of Tactical Media



TMF EDITORS March 07, 2017 TACTICAL MEDIA, THEORY, MEDIA THEORY, TACTICAL EDUCATION, TACTICAL RESEARCH

"Tactical Media are what happens when the cheap 'do it yourself' media, made possible by the revolution in consumer electronics and expanded forms of distribution (from public access cable to the internet), are exploited by groups and individuals who feel aggrieved by or excluded from the wider culture..." (Garcia & Lovink, "The ABC of Tactical Media", 1997)

Tactical Media was a movement that combined art, experimental media and political activism. Although it had been present around the world in various forms many years, Tactical Media as a movement was first identified and named as such, by a group of artists, media pirates and theorists in Amsterdam in the 1990s. Tactical Media emerged when the modest goals of media artists and media activists were transformed into a movement that challenged everyone to produce their own media in support of their own political struggles. This "new media" activism was based on the insight that the longheld distinction between the 'street' (reality) and the 'media' (representation) could no longer be upheld. On the contrary, the media had come to infuse all of society.

1 image

# **Community Archives**

Small organisation, volunteer/artist-run **Non-industry** digital-born artworks **Personal digital archiving Art movements history** Marginalized (art) communities rhizomatic archives support networks

A Market

# Manifold: annotations in Digital Humanities

Debates

3. What's Next: The Radical, Unrealized Potential of Digital Humanities | Miriam Posner

But the very difficulty of imagining alternative possibilities should give us pause. When the structures that govern our identities seem as unassailable as they do now, they must have great power. And so what could be more ambitious, more interesting and challenging, than understanding the nature of that power?

These questions make me think of the feminist film theorist Laura Mulvey, whose 1977 experimental film, Riddles of the Sphinx (directed by Mulvey and Peter Wollen), I happened to see as I composed an early version of this chapter. Before Mulvey, feminist scholarship tended to do what I think of as counting women. How many women show up on the screen, in what roles, and how does the film treat them? HIGHLIGHT

CURRENT GROUP:

My Public Annota...

≪ SHARE

Mulvey's intervention, in a 1975 article for Screen, was to show us that broken ("Visual Pleasure and Narrative Cinema"). It was not just that w women in powerful roles. It was that the entire organizing logic of narra around the subjugation of women. She showed us in film studies, the distrained, that structural inequalities can be written in to the very language of a medium.

Perhaps you can see how I think this applies to digital humanities projects, too. We can do what we know how to do: visualize datasets that we inherit from governments, corporations, and cultural institutions, using tools that we have borrowed from corporations. Or we can scrutinize data, rip it apart, rebuild it, reimagine it, and perhaps build something entirely different and weirder and more ambitious.

### ... about underrepresented on platforms

3. What's Next: The Radical, Unrealized Potential of Digital Humanities | Miriam Posner

with the film, screening it for very confused audiences, most of whom walked out. But she told us, too, that some of them stayed, and that those who did tended to be the mothers, who were so grateful to see themselves, finally, on the screen. So maybe this is the thrill we can work toward the thrill in capturing people's lived experience in radical ways—ways that are productive and generative and probably angry, too.

Of course, we cannot capture these experiences without the contributions of the people whose lives we are claiming to represent. So it is incumbent on all of us (but particularly those of us who have platforms) to push for the inclusion of underrepresented communities in digital humanities work, because it will make all of our work stronger and sounder. We cannot allow digital humanities to recapitulate the inequities and underrepresentations that plague Silicon Valley; or the systematic injustice, in our country and abroad, that silences voices and lives.

This chapter's title proposes that DH might work toward a different possible future, and this is what I meant. Sometimes people frame calls for DH to engage more with race and gender as a kind of philanthropic activity; won't you please consider the poor women and people of color?

But that is wrong. DH needs scholarly expertise in critical race theory, feminist and queer theory, and other interrogations of structures of power in order to develop models of the world that have any relevance to people's lived experience. Truly, it is the most complicated, challenging computing problem I can imagine, and DH hasn't even begun yet to take it on.

🖺 💿 Aa Q 🛞
Show the following:
HIGHLIGHTS
Vours Vothers
Vours Vothers
✓ Show All
READING GROUPS
Show All
My Private Annotations
My Public Annotations
SHOW ALL HIDE ALL

### Varia Rotterdam is a space for developing collective approaches to everyday technology

Feminist: Networks of One's Own refers to Virginia Woolf's classic essay A Room of One's Own which makes the case for a woman needing a space to herself to write. Networks Of Ones Own takes this text as an inspiration to rethink digital intimacy, dependencies and relations in networked practices. It wants to re-imagine how technical work and content work grow together, and radically questions the way tools and practices are shaping collaborative content and vice versa.



0

### FEM INIS T PRINCIPLES OF THE IN TER NE T



### RESISTANCE



The internet is a space where social norms are negotiated, performed and imposed, often in an extension of other spaces shaped by patriarchy and heteronormativity. Our struggle for a feminist internet is one that forms part of a continuum of our resistance in other spaces, public, private and in-between.

AMPLIFY





We claim the power of the internet to amplify women's narratives and lived realities. There is a need to resist the state, the religious right and other extremist forces who monopolise discourses of morality, while silencing feminist voices and persecuting women's human rights defenders.

#### The Network We (de)Served, (XPUB Special Issue #08) Thursday, 04 April 2019 at Varia

Dear guest,

We traveled from home to home by bicycle, setting up homeservers. As friends and companions on this *Infrastructour*, we studied our routers over drinks served by our hosts. Where possible we installed our servers in our homes, in other cases we had to depend on another member of the group. While selfhosting together we questioned our understandings of networks, autonomy, online publishing and social infrastructures, where each of us departed from a different question. We would like to share our personal (yet interconnected) routes with you, tell you a story, present our web- and printed zines, and invite you to explore our homebrewed network.

Date: Thursday, 04 April 2019 Location: Gouwstraat 3, Rotterdam Entrance: Free Start: 19:00

#### https://issue.xpub.nl/08/

Contributors: Simon Browne, Tancredi Di Giovanni, Paloma García, Rita Graça, Artemis Gryllaki, Pedro Sá Couto, Biyi Wen, Bohye Woo, Roel Roscam Abbing, Manetta Berends, Lídia Pereira, André Castro, Aymeric Mansoux, Michael Murtaugh, Steve Rushton, Leslie Robbins.





#### laura wrote the following post 15 days ago



#### **ARTFUTURA 2019 - PROCESSING THE FUTURE**

Today we live in the present future more than ever. We are right in the middle of two great crossroads that will determine the future. We talk about the Anthropocene and new phase in human evolution, augmented and reconnected by technology.

Convinced that transformative technology must be centred on the human being, the future collective intelligence augmented by technology will become in a few years a deep global mind already announced by Terence McKenna at ArtFutura 92.

Virtual Reality, Artificial Intelligence and Internet (IoT) will converge to create Collective Artificial Intelligence, whose language will be virtual reality and neurodigital telepathy. The collective immersion allows the fusion of people and the world into a whole. This will be the future, a world of expanded reality

19:30 Doors

#### IKLECTIK

expand

### **RICH MIX**

20:00 AV program - Premiere

SATURDAY 30 NOVEMBER 2019 RICHMIX

21:10 Live AV set - Lia Mice and They Said They Sav

22:00 Live AV performance Richard Evans - SENT 22:50 Live Coding - Rumblesan + Heavy Lifting

#### SATURDAY 30 NOVEMBER 2019 IKLECTIK 12:00 Doors

12:30 AV program - Schools Futura 13:30 Artist Talk David Strang 14:00 Artist Talk Nicola Plant 14:30 Artist Talk xname 15:00 Artist Talk Terry Trickett

SUNDAY 01 DECEMBER 2019 IKLECTIK

#### 23:40 AV program - Artworks 35-47 Bethnal Green Rd. EI 6LA



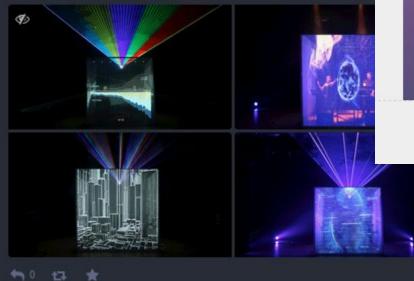


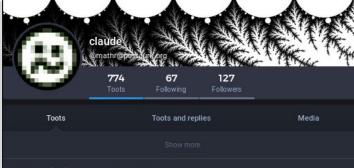
#### laura @netzzz@post.lurk.org 🔒

@lauranetzzz

#### 9h

#ArtFutura London 2019 will present Richard Evans SENTINEL a per about data and climate change #technology #DataAnalytics #ClimateChange (link: artfutura.org/v3 artfutura.org/v3/en





#### claude @mathr@post.lurk.org

nevermind, that approach violates the precondition that z (as argument to the outer A\_n) is small when n is not a multiple of the periodic return to 0.

I think I want something more like \$A\_n(c, B\_m(c, z))\$ but I can't figure out if the order of A and B is conducive to what I'm trying to do... I don't think it commutes.

🦚 0 🖽 ★

2

25

10

#### claude @mathr@post.lurk.org

That expression is for A\_n  $\rightarrow$  A\_{n+1}, which I already have code for (thanks to knighty) but what I'm really after today is something for A\_n  $\rightarrow$  A\_{2n}.

Suppose \$\$ A\_n(c,z) = \sum a\_{n,i,j} c^i z^j \$\$ and \$\$ A\_{2n} = A\_n(c, A\_n(c, z)) \$\$ find expressions for \$\$ a\_{2n,i,j} \$\$ in terms of \$\$ a\_{n,i,j} \$\$

#### #maths #help #series

🦄 1 🖽 ★

#### claude @mathr@post.lurk.org

got something to expand by limiting summation ranges to 3 instead of \infty. would have been nicer to get summations with binomial coefficients or what ha you. this is an expansion of something done to  $s_{j}a_{i,j}a_{$ 

 $\begin{array}{c} \begin{array}{c} \begin{array}{c} & a_{2,3}a_{3,0}z^{*}+2a_{2,0}a_{3,2}z^{*}+2a_{2,1}a_{3,1}z^{*}+2a_{2,2}a_{3,0}z^{*}+2a_{2,0}a_{3,1}z^{*}+2a_{2,1}a_{3,2}z^{5}\\ \hline \\ & a_{2,0}a_{3,0}z^{*}+2a_{2,0}a_{3,2}z^{4}+2a_{1,3}a_{3,1}z^{4}+2a_{2,1}a_{2,2}z^{3}+2a_{1,0}a_{3,2}z^{5}+2a_{2,2}a_{2,3}z^{5}\\ \hline \\ & 2a_{1,1}a_{3,2}z^{3}+2a_{1,2}a_{3,0}z^{3}+2a_{1,3}a_{3,0}z^{3}+2a_{2,1}a_{2,2}z^{3}+2a_{1,0}a_{3,2}z^{2}\\ \hline \\ & 2a_{1,1}a_{3,1}z^{2}+2a_{1,2}a_{3,0}z^{2}+2a_{2,0}a_{2,2}z^{2}+a_{2,1}^{2}z^{2}+2a_{1,0}a_{3,1}z^{2}+2a_{1,0}a_{3,2}z^{2}\\ \hline \\ & 2a_{1,1}a_{3,1}z^{2}+2a_{1,2}a_{3,0}z^{2}+2a_{2,0}a_{2,2}z^{2}+a_{2,1}z^{2}+2a_{1,0}a_{3,1}z^{2}+2a_{1,0}a_{3,0}z^{2}\\ \hline \\ & 2a_{0,3}a_{3,2}z^{5}+2a_{1,2}a_{2,0}z^{2}+2a_{2,0}a_{2,2}z^{2}+a_{2,1}z^{2}+2a_{1,0}a_{3,1}z^{2}+2a_{1,0}a_{3,1}z^{2}+2a_{1,0}a_{3,2}z^{3}\\ \hline \\ & 2a_{0,3}a_{3,2}z^{5}+2a_{1,2}a_{2,2}z^{4}+2a_{1,3}a_{2,1}z^{4}+2a_{3,3}Zz^{3}+2a_{0,0}a_{3,3}z^{3}+2a_{0,0}a_{3,3}z^{3}\\ \hline \\ & 2a_{0,2}a_{3,1}z^{3}+2a_{0,0}a_{3,0}z^{3}+2a_{1,0}a_{2,2}z^{5}+2a_{1,0}a_{3,1}z^{2}+2a_{0,0}a_{3,3}z^{3}+2a_{0,0}a_{3,3}z^{3}\\ \hline \\ & 2a_{0,2}a_{3,1}z^{3}+2a_{0,0}a_{3,0}z^{3}+2a_{1,0}a_{2,3}z^{3}+2a_{1,0}a_{2,2}z^{2}+2a_{1,1}a_{2,2}z^{3}\\ \hline \\ & 2a_{3,2}Zz^{2}+2a_{0,0}a_{3,2}z^{2}+2a_{0,0}a_{3,1}z^{2}+2a_{0,0}a_{3,2}z^{4}+2a_{1,3}a_{2,1}z^{3}+2a_{1,3}a_{2,0}z^{3}\\ \hline \\ & 2a_{0,0}a_{3,0}+2a_{1,0}a_{2,0}z^{4}+2a_{0,0}a_{3,1}z^{2}+2a_{0,0}a_{3,2}z^{4}+2a_{1,1}a_{2,2}z^{3}+2a_{1,1}a_{2,2}z^{2}\\ \hline & 2a_{1,2}a_{2,2}z^{3}+2a_{0,0}a_{2,3}z^{4}+2a_{0,2}a_{2,2}z^{4}+2a_{1,3}a_{2,2}z^{5}+2a_{0,3}a_{2,2}z^{5}\\ 2a_{1,2}a_{1,3}z^{5}+2a_{0,0}a_{2,3}z^{4}+2a_{0,0}a_{2,2}z^{4}+2a_{0,0}a_{2,1}z^{4}+2a_{1,1}a_{3,2}z^{4}+a_{1,2}z^{4}\\ 2a_{2,3}Zz^{3}+2a_{0,0}a_{2,3}z^{4}+2a_{0,0}a_{2,2}z^{4}+2a_{0,0}a_{2,1}z^{4}+2a_{1,1}a_{3,2}z^{4}+a_{1,2}z^{4}\\ 2a_{2,3}Zz^{3}+2a_{0,0}a_{2,3}z^{4}+2a_{0,0}a_{2,2}z^{2}+2a_{0,0}a_{2,2}z^{5}+2a_{0,0}a_{2,2}z^{5}\\ 2a_{1,2}a_{1,2}z^{5}+2a_{0,0}a_{2,3}z^{4}+2a_{0,0}a_{2,2}z^{2}+2a_{0,0}a_{2,2}z^{2}+2a_{1,0}a_{2,2}z^{2}+2a_{1,0}a_{1,2}z^{2}+a_{1,2}a_{2}z^{2}+a_{2}a_{2}a_{2}z^{2}+2a_{1,0}a_{2}z^{2}+2a_{$ 



#### claude @mathr@post.lurk.org

Scaled-double with SIMD vector size 2 takes 10mins vs long ( clock time) at this Burning Ship location (zoom depth 1e410)

However, the scaled-double version looks a bit rougher even ( thumbnail size. I'm not sure why, but it's a bit disappointing implementing it.





#### claude @mathr@post.lurk.org

<u>mathr.co.uk/harmonic-protocol/</u> <u>mathr.co.uk/harmonic-protocol/...</u> <u>mathr.co.uk/harmonic-protocol/...</u> are all equivalent, and do as it did before

#### mathr.co.uk/harmonic-protocol/..

is 23-EDO with an offset of 13 (it defaults to the offset nearest a perfect 5th unless one is explicitly specified)

#### mathr.co.uk/harmonic-protocol/...

is 53-EDO with an offset of 5 steps, which gives descending tones. Uses 70% of a core on my Ryzen 2700x in Firefox.

if editing the URL in the address bar, you need to refresh manually. maybe I can add an event listener or something to do that automatically.

#### Harmonic Protocol

Feedback amplifying tones according to the level 7 semitones away> math.co.uk

#### 🦘 1 🔂 🌟

12

#### claude @mathr@post.lurk.org

I made it so I can set the number of steps in the <u>#equal #temperament #scale</u> as a command line argument, as well as the offset for the boost. Before now these were hardcoded to 12 and 7 respectively. With 53 and 5 it sounds quite brooding and melancholic. Descendment.

The native version uses 30% CPU for 53-tet on my main desktop machine, there is a hardcoded limit of 128-tet purely because the data structures need a size known at compile time (I could fix this with `malloc()` but I figure changing one <u>#CPP</u> `<u>#define</u>` and recompiling is fine for those that want it).

The key <u>#maths</u> for calculating the <u>#Q</u> factor for the <u>#bandpass</u> <u>#dsp</u> <u>#filter</u> is:

 $Q = sqrt(2^{1/N} + 1) / (2^{1/N} - 1)$ 

Code not published yet, first I need to figure out how to expose these variables to the Emscripten version's HTML. Not tonight...





Bio

reader in 21st Century Visual Culture/Autonomous Practices at Willem de Kooning Academy, Rotterdam, Netherlands http://floriancramer.nl

Location

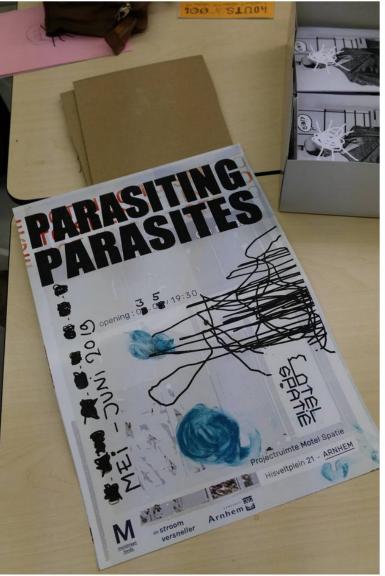
Rotterdam, Netherlands



Ernst Jandl's 1964 visual poem 'film' turned into an animated GIF:

#poetry #visualpoetry #GIF





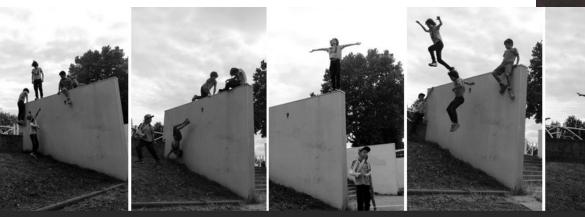
#### Synchronicityofparasites: symposium at Zinedepo, Arnhem

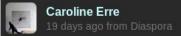
my report of the #synchronicityofparasites symposium at Zinedepo, Motel Spatie, Arnhem, with Marc van Elburg, Anders M. Gullestad, Anna Poletti & Wilfried Hou Je Bek (that was parasitically made part of the #urgentpublishing conference co-organized by our research program):

http://networkcultures.org/makingpublic/2019/06/07/synchronicityofparasites-zinedepo-motel-spatie-17-5-2019/

🖤 2 Likes

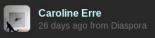
13 Reshares





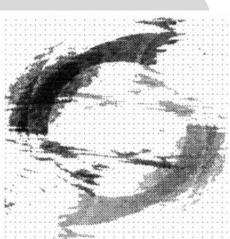
Kids - Billom, 21.09.2019 (6 photos)

#kids #wall #climb & #jump #billom #mywork #photo



#sundaygimp #shoulder #mywork #photo





Intermedia dramaturgies \* Digital curation intermedia@node9.org

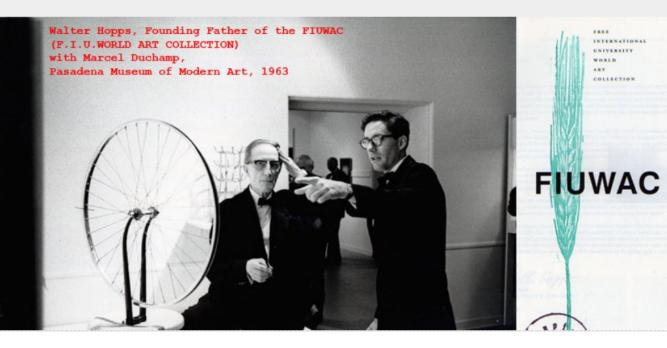
Connections



Ženy z hlíny. choreography: Eva Urbanova, 26.9. 2019 Prague

Intermedia dramaturgies * Digital curation • 7 days ago	
1 Like -	· • •
Comment	

#### FIUWAC @ VERBEKE-FOUNDATION



legal

- Research and education (library) licence
- Analyse and comparative study (knowledge is not copyrighted, just expression of knowledge)
- Data mining, collection in the state of acquisition (primary selection, extract metadata, copyright assignment)
- Fair use

goal of the organisation: coop providing public free knowledge? gallery business selling artworks?

# social / private curation channels

- Collection enrichment, contextualisation
- Storytelling: finding threads in existing content, personal selection, sources management, prototyping

In short, we can say that Deleuze's societies of control provide a *medium* through which protocol is able to express itself. In such an instance it is "information"—in all the contested meanings of the term—that constitutes the ability for protocol to materialize networks of all kinds. Protocol always implies some way of acting through information. In a sense, information is the concept that enables a wide range of networks—computational, biological, economic, political—to be networks. Information is the key commodity in the organizational logic of protocological control. *Information is the substance of protocol*. Information makes protocol matter.

#### Find an instance

Q Search instance names a →

▼ Add filter

Show connections

#### Color coding

#### 🌢 Activity 👻 🗙

The average number of statuses posted per day. This is an exponential scale.

0

33939

# RADICAL/NETWORKS

October 18-20, 2019 Prime Produce, NYC

Jump to:

- Friday Oct 18
- Saturday Oct 19
- Sunday Oct 20

### Friday Oct 18

	Main Floor	Upstairs*	Walking Tour
9:00	Workshop: Digital Security: It's All Soupy Slammer	Workshop: Run Your Own Community Social Network	
10:00			
10:15	Workshop: LocalNet Adventure!! / The Well Bottom Alden Rivendale Jones		
11:00			
12:00			Feminist History of
13:15			the Internet Walking Tour

### Tickets Available!

Hosted by

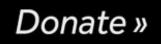


prime produce apprentice cooperative

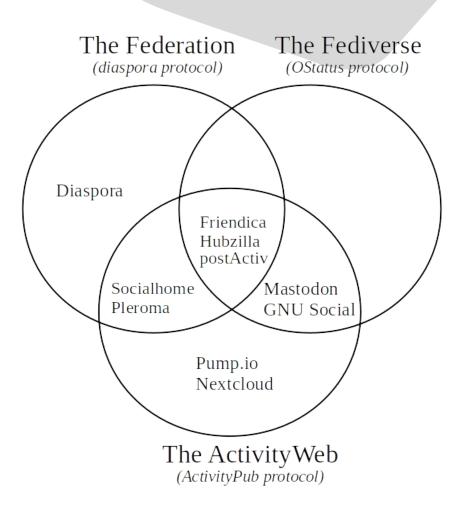
Live stream provided by



Watch Here! Live Captioning Available



## Federated decentralized protocols



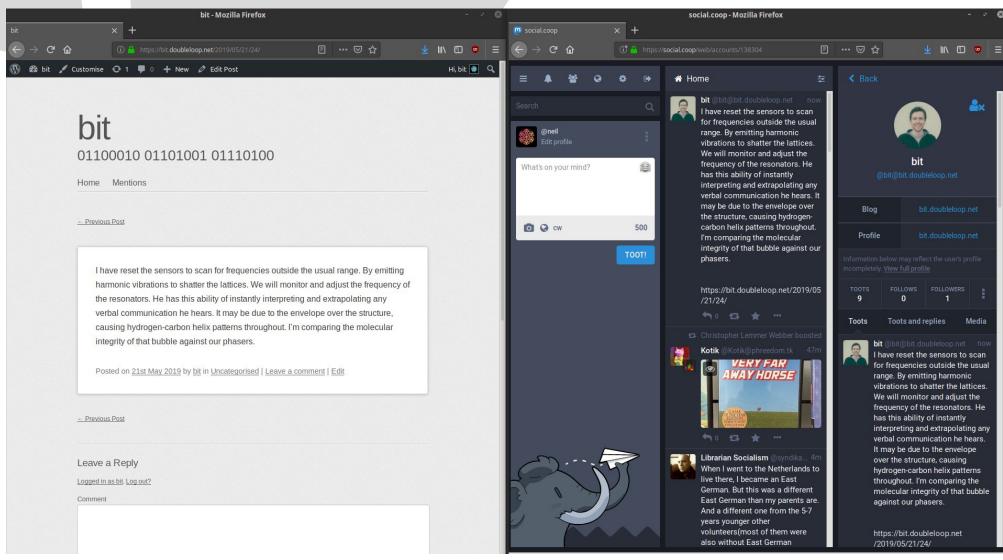
### ActivityPub: Twitter-like

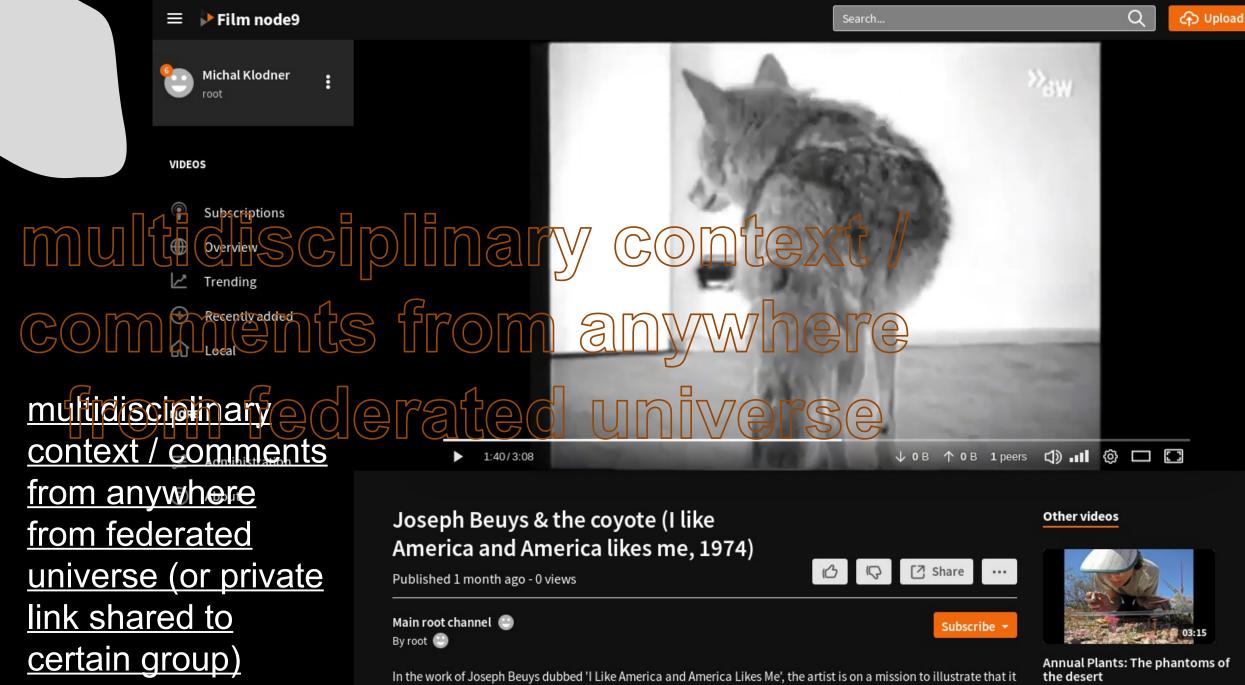
Diaspora

### **Zot: Nomadic identity**

- You have the right to a permanent internet identity which is not associated with what server you are currently using and cannot be *taken away from you by anybody, ever.* (Mike Macgirvin, Zot creator).
- Speak another protocols
- Channels cloning: multiple locations, node shutdown resiliency
- Finetune channel permissions

# aggregate: Follow Wordpress blogs





is possible for human beings to coexist with nature. In this project of 1974, the artist is inspired by the belief that the ...



Annual Plants: The phantoms of

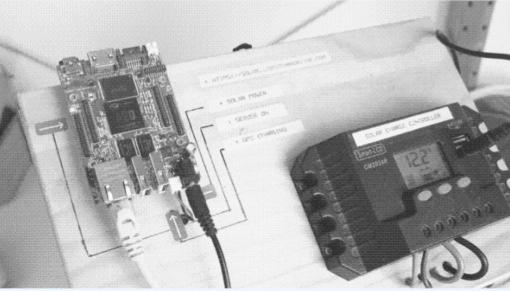
3 days ago - 0 views

efficient (hardware, code, data)

# sometimes offline / solar powered

run your own / know your admin

green providers / ethical



#### LOW←TECH MAGAZINE This is a solar-powered website, which means it sometimes goes offline \* About | Low-tech Solutions | High-tech Problems | Obsolete Technology | Offline Reading | Archive | Donate | №

#### How to Make Wind Power Sustainable Again

High-tech Problems

If we build them out of wood, large wind turbines could become a textbook example of the circular economy.





Reinventing the Small Wind Turbine Low-tech Solutions A wooden rotor and tower greatly increase the net energy output over the lifetime of a small wind turbine.



Low-tech Magazine: The Printed Website Obsolete Technology Read Low-tech Magazine with no access to a computer, a power supply, or the internet.