

Knowledge Aggregation and Propagation

Cryptoeconomic Systems Summit
MIT Media Lab
October 2019

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0E4C A12B E16B E691 56F5 40C9 984F 10CC 7716 9FD2

Agenda

- Short talk about history & activities as a Bitcoin scribe
- Meta-talk: Conference talks
- Overcoming journal paywalls (scihub, etc)
- Knowledge preservation & dissemination (don't blink)

whoami

- Bryan Bishop
- Bitcoin Core contributor
- Bitcoin developer
- ex LedgerX (4 years!)
- Biotech
- Follow me: <https://twitter.com/kanzure>

Conference talk transcripts

- IMHO, all talks should have transcripts
- Text is more convenient for mass consumption, and takes up less of a busy professional's time
- Real-time, publish immediately after
- Immediate transcripts are much more valuable
- Not everyone can attend conferences (travel costs, logistics, etc.), they don't scale.
- Let's get to the fun part...

Conference Coverage

BPASE 2017-2018 Texas Bitcoin Conference FBI-DIYbio 2011-2012
Coindesk Consensus 2016
IARPA-MIST Magical Crypto W3 Blockchain Conference 2016
AGI 2016 Baltic Honeybadger 2018
Building On Bitcoin 2018
Austin Bitcoin Devs SF Bitcoin Devs
London Bitcoin Devs Dallas Bitcoin Symposium
L2 Summit 2018
Biohack The Planet 2018-2019 Bitblockboom
gp-write 2016-2017
Bitcoin Optech Taproot workshop
Bitcoin Devcore 2015
Bitcoin CoreDev Tech 2017-2019 grincon Open Science Summit 2011-2012
H+ Summit 2009-2011 Breaking Bitcoin 2017-2019
Bitcoin Edge Dev++ 2018-2019 Real World Crypto 2018
MIT Bitcoin Expo 2015-2019
Startup Science 2012 Rebooting Web of Trust 2019 Prague
Stanford Blockchain Conference **Scaling Bitcoin** Singularity Summit 2009

Scaling Transcripts

- 2015 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/>
- 2015 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/hong-kong/>
- 2016 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/milan/>
- 2017 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/stanford-2017/>
- 2018 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/tokyo-2018/>
- 2019 - <https://diyhpl.us/wiki/transcripts/scalingbitcoin/tel-aviv-2019/>

Bitcoin Edge Dev++ Transcripts

- <https://diyhpl.us/wiki/transcripts/scalingbitcoin/tokyo-2018/edgedevplusplus/>
- <https://diyhpl.us/wiki/transcripts/bitcoinedge/decentralized-financial-architecture-workshop/>
- <https://diyhpl.us/wiki/transcripts/scalingbitcoin/tehlaviv-2019/edgedevplusplus/>



Bitcoin *edge* ^{initiative}



Andreas M. Antonopoulos ✓

@aantonop



I thought it was impossible to transcribe
[@roasbeef](#) live. I was wrong.

[@kanzure](#)'s hands should be banned as a fully
automatic weapon



Peter Todd @peterktodd · Nov 4, 2017

Replying to [@kanzure](#) [@roasbeef](#) and [@ScalingBitcoin](#)



7:46 PM · Nov 4, 2017 · [Twitter Web Client](#)





Adam Back @adam3us · Nov 4, 2017

Replying to @lightcoin @kanzure and 3 others

we want to see video of @kanzure typing fingers as he transcribes @roasbeef talking at full speed!



1



8



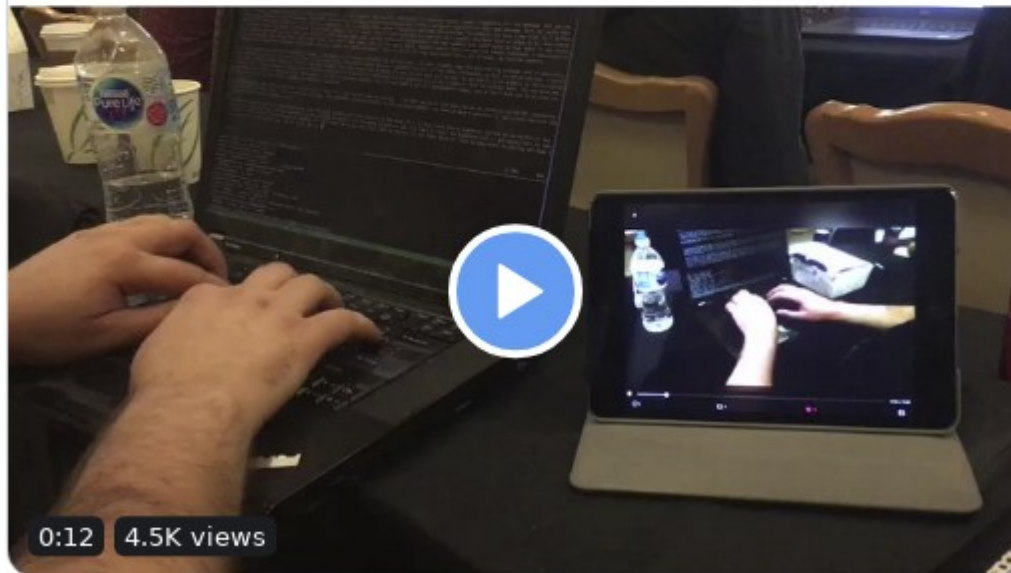
Bryan Bishop @kanzure · Nov 4, 2017

here you go



Johnathan Corgan @jmcorgan · Nov 4, 2017

Replying to @peterktodd @kanzure and 3 others



2



11





Christopher Allen
@ChristopherA

As usual, @kanzure is doing an AMAZING job capturing the text the talks & presentations live from @ScalingBitcoin diyhpl.us/wiki/transcrip...

2:18 PM · Nov 4, 2017 · [Twitter for iPhone](#)

13 Retweets 46 Likes



Christopher Allen @ChristopherA · Nov 4, 2017
Replying to @ChristopherA @kanzure and @ScalingBitcoin
Watching @kanzure transcribing @roasbeef is like watching a race between two thoroughbreds! Who will win?

2 7 15



Kalle Rosenbaum
@kallerosenbaum

Replying to @kanzure and @laurilove

Is transcribing also on your spare time? Your work is amazing.

2:46 PM · Oct 22, 2017 · [Twitter for Android](#)



Pieter Wuille
@pwuille

Thanks @kanzure for another transcript (including references!) of a talk of mine!



Bryan Bishop @kanzure · Jul 24, 2018

Transcript: @pwuille on taproot, Schnorr signatures and SIGHASH_NOINPUT diyhpl.us/wiki/transcrip...

twitter.com/SFBitcoinDevs/...

6:17 PM · Jul 24, 2018 · [Twitter Web Client](#)

8 Retweets 75 Likes



Adam Gibson @waxwing__ · Jan 25, 2018



Replying to @kanzure

@kanzure is hoping to provide a single transcript to act as witness for all of @pwuille 's talks, but unfortunately this requires relying on the one-more-kanzure assumption which academics consider dubious at best.



1



1



6



Bryan Bishop @kanzure · Jan 25, 2018



Instead of transcribing talks, I simply write down what @pwuille is going to say, and then gmaxwell sends me the difference between what I expected him to say and what was actually said (like an efficient block xfer scheme). It's really quite trivial, if you don't think about it.



5



Bryan Bishop

@kanzure



i am going to ask Andrew Poelstra to invent a way for me to do transcriptless transcripts, similar to his scriptless scripts technique. There's nothing there, that's the magic.

1:15 PM · Feb 8, 2018 · [Twitter Web Client](#)

The process of transcribing

- Goal: type very, very quickly
- Developed this skill by years of arguing over the Internet
- Started in high school, wanted to prove how much of a waste of time all the classes were.
- Markdown formatting, headings
- Publish to web via Git + Ikiwiki
- Rapid bookmarks using jotmuch/buku

Transcripts are funny

Google Scholar

"diyhpl.us/wiki/transcripts" -site:diyhpl.us



Articles Case law

Stand on the shoulders of giants

Researcher who edited babies' genome retreats from view as criticism mounts

O Dyer - BMJ, 2018 - bmj.com

... Nov 2018. <http://diyhpl.us/wiki/transcripts/human-genome-editing-summit/2018-hong-kong/jiankui-he-human-genome-editing>. 2 Slides from presentation of He Jiankui. Second international summit on human genome editing, Hong Kong. Nov 2018 ...

☆  Cited by 5 Related articles All 5 versions

Is an FBI agent a DIY biologist like any other? A cultural analysis of a biosecurity risk

S Tocchetti, SA Aguiton - Science, Technology, & Human ..., 2015 - journals.sagepub.com

Biotechnology's promises has been widely recognized as a major enterprise accelerating the commodification of the biological. After the 9/11 events and the subs...

☆  Cited by 11 Related articles All 3 versions

[PDF] perform-research.eu

[PDF] 3.10 Scalable Funding of Blockchain Micropayment Channel Networks

[R Wattenhofer](#), [C Decker](#), [C Burchert](#) - Opportunities and Risks of ... - research.aalto.fi

Page 35. 132 17132–Opportunities and Risks of Blockchain Technologies 4 Higgins, S.(August, 2016 3). coindesk. Retrieved from coindesk: <http://www.coindesk.com/bitfinexbitcoin-hack-know-dont-know/> 5 Khandelwal, S.(2013, November 25). thehackernews ...

☆  Related articles All 3 versions 

[PDF] aalto.fi

The FBI and biohackers: an unusual relationship

H Wolinsky - EMBO reports, 2016 - embopress.org

... in microbiology, told the FBI-sponsored “bridges” meeting in 2012: “[We] want to show the international community that this model [of cooperation between the FBI and DYIbio] is safeguarding your practice, and that’s to our mutual benefit” (<http://diyhpl.us/wiki/transcripts/fbi> ...

☆  Cited by 11 Related articles All 8 versions

[PDF] embopress.org

Full View

Analysis of the Bitcoin UTXO set

[S Delgado-Segura](#), [C Pérez-Sola](#)... - ... Conference on Financial ..., 2018 - Springer

... <https://bitcoin.org/en/release/v0.15.0>. 7. Greg Maxwell. A deep dive into bitcoin core 0.15. SF Bitcoin Developers Meetup, September 2017. <http://diyhpl.us/wiki/transcripts/gmaxwell-2017-08-28-deep-dive-bitcoin-core-v0.15/>. 8. Blockcypher. Bitcoin transaction ...

☆  Cited by 26 Related articles All 9 versions

[PDF] iacr.org

Stats on transcripts

<https://diyhpl.us/wiki/transcripts>



Bryan Bishop

@kanzure



Stats on transcripts stored at [diyhpl.us/wiki/transcrip...](https://diyhpl.us/wiki/transcripts)

years: 2009-2019

words: 1,555,921

talks/transcripts: 642

filesize: 10 MB

♡ 45 9:17 AM - Apr 14, 2019



Scribe Fund?



Bryan Bishop
@kanzure



I'm having trouble keeping up with transcripts for all the bitcoin conferences. Recently that includes [@advbitcoin](#), [@LDNBitcoinDevs](#) and Munich Bitcoin Techday. Is there any interest in a funding pool for transcripts? 3rd party service would be retained for this.

♡ 35 7:17 PM - Feb 13, 2019



💬 22 people are talking about this



Bryan Bishop @kanzure · Feb 13, 2019



Replying to @kanzure

I estimate that there's about 20 good talks per month. This works out to maybe 240 talks/year. On average, 1 hour each. Most online transcribing services charge around \$1-2/minute, so this works out to maybe \$30k/year.



Bryan Bishop
@kanzure

I think part of the magic is fast transcripts, which are harder to get. Most of these services have turnaround time of like 3 days. Having a historical record is useful, but I think even better to have something immediately done.

♡ 7 7:20 PM - Feb 13, 2019



👤 See Bryan Bishop's other Tweets



Scribe Fund?

- I have other stuff going on.
- I can't type everything. Well, I could. But I won't.
- It would be great if the community could get together to pay for a scribe to travel around (or engage remotely) to type transcripts at conferences.
- Stenographers, easily \$200k/year salaries (for court stenographers)
- Most likely, needs to be a developer or technical editor who can absorb bitcoin knowledge and knows how to spell UTXO (hint: it's not "You tea ecks oh").

Transcripts via machine learning?

- Train on audiobooks
- Attempted an implementation in tensorflow based on Baidu's DeepSpeech
- <https://diyhpl.us/wiki/transcripts/baidu-deep-learning-for-speech-recognition/>
- Mozilla eventually made [a better implementation](#)
- My implementation had a ~20% error rate
- Seems like this isn't quite viable..... yet.

Conference quality

- Has anyone actually studied this? Use surveys before/after.
- Talk selection on easychair is not ideal
- Conference talks should be commissioned (or invited) and designed by 1 to 3 technical subject matter experts.
- Small improvements have large effects (considering total number of attendees and time spent at conferences in our industry)
- Conference talk aggregator service?

Bridge for Academia (resources)

- bitcoin-dev mailing list (lists.linuxfoundation.org)
 - Disclosure: I am part of the moderator team (usually the most active)
- IRC logs: #bitcoin-wizards, #bitcoin-core-dev, etc.
- bitcointalk.org

Bookmarks

- Use jotmuch/buku for command line, tagged bookmarks
- ~8 years ago lost 50,000 bookmarks in data loss event
 - Learned my lesson about backups
 - Slowly working my way back up

Manuscripts

- (hosted collection)
- timestamps! (opentimestamps)

Meetlog

- An entirely speculative exercise.. the following is 100% fictional and absolutely does not exist.
- Homebrew CRM system
- Record all conversations since January 2009
 - Date, time, conversation topics (tags), contact info
- If it existed, this would amount to a 6 MB yaml file
- Algorithm for sharding knowledge across a certain number of individuals, also contact frequency reminders
- Trace origin of ideas, their frequency and contagion

Academia is broken

- Academic publishing, in particular, is broken
- What to do about this?
 - Prediction markets? Derivatives markets?
- SciHub, piracy
- I Am nOt aCtIvELY SoLiCiTiNg a complete copy of scihub (not necessarily libgen); nobody has one and this is not good. This is an extremely important data set and we should make sure we have as many copies as possible.
- In 2013, accidentally deanonymized scihub creator because I remembered her photo from a Harvard conference where we both spoke in 2010
 - Sorry about that... I was just excited and it blurted out.
- ... Aaron Swartz ...

Disconnect between academic publishing & bitcoin developers

- Old concepts posted on forums and mailing lists only sometimes get cited.
- Situation has been improving over the past few years
- But it's very strange to see papers get written that don't cite prior work from the developers

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