A brief history of Aaron Swartz on GitHub

Camille Akmut

July 1, 2019

Abstract

This research covers the complete period from 2008, when Aaron Swartz first joined GitHub, to just a few days before his death in January 2013. It includes, where available, relevant entries from his blog for context (later entitled *Raw thought*) and other sources.

1 Introduction

Aaron Swartz created his account, `aaronsw`, on Github on April 4 2008¹.
His first recorded major action was to create a repository called `watchdog`.
His first commit belonged to it.
He chose the following picture for his profile and never changed it – so far as we are able to tell².

Figure 1: Aaron Swartz' profile picture on GitHub

It is unknown to us what its origins are, and what its meaning was to him.

He had also used it for his Twitter account, opened in March 2007 – here too never to be changed again from what we can ascertain³.

He stayed on the platform from 2008 to 2013, the year of his death.

His last commit known to us occurred on January 6 2013, “2:40 PM UTC”, and has for full signature :

`f3c99f794a7f83f8e1645d4e58a89948a1939e65`

This was 5 days before his death on January 11.

It pertained to his project `htmldiff`.

If Aaron had other GitHub accounts, or other similar ones on other sites, they are not known to us. This was his primary one by all we know.

Most likely he also created `webpy`⁴, with almost certitude `pokayoke`⁵, and possibly `deaddrop`⁶; though these were not personal but project accounts.

Let us give here some broad descriptions and trends of his activities :

2008 through 2010 were mostly concerned with his own two projects, `watchdog` and `webpy`, with the addition of `tor2web` at the end of 2010.

2011 through 2013 marked a notable turn towards creating many more projects and contributing to many more outside of his own.

¹<https://github.com/aaronsw>

²<https://web.archive.org/web/20080510212557/https://github.com/aaronsw>

³<https://web.archive.org/web/20071031090837/https://twitter.com/aaronsw>

⁴<https://github.com/webpy>

⁵<https://github.com/pokayoke>

⁶<https://github.com/deaddrop>

All of these displayed a deep attachment to the web (of which `webpy` and `html2text` are perhaps the most important, or best known) and a lasting concern with how to use it for social change (`watchdog`).

Swartz' contributions to Tor have not been highlighted enough : he created or contributed to many programs for it, like `tor2web`.

Further analyses of the data presented here will no doubt provide many more insights into the life and work of this important figure, pioneer.

2 Data

2.1 Repositories and commits

2008		
<i>April 4</i>	<i>watchdog</i>	created
April	watchdog	60 commits
May	watchdog	16 commits
June	watchdog	32 commits
July	watchdog	42 commits
August	watchdog	25 commits
September	watchdog	73 commits
October	watchdog	70 commits
	webpy/webpy	12 commits
November	watchdog	22 commits
	webpy/webpy	2 commits
December	watchdog	6 commits
	webpy/webpy	3 commits
2009		
January	webpy/webpy	1 commit
February	watchdog	5 commits
March	webpy/webpy	1 commit
April	watchdog	1 commit
May – June	-	-
<i>July 30</i>	<i>ghcontest</i>	created
July	ghcontest	6 commits
	watchdog	3 commits
	webpy/webpy	3 commits
August	watchdog	16 commits
September	-	-
October	webpy/webpy	1 commit
November – December	-	-
2010		
January – February	-	-
<i>March 27</i>	<i>webpy</i>	created
April	webpy/webpy	2 commits
May – November	-	-
<i>December 25</i>	<i>tor2web</i>	created
<i>December 30</i>	<i>tweepy</i>	created
December	webpy/webpy.org-old2	102 commits
	tor2web	13 commits

Table 1: Swartz’ commits and repositories on GitHub (2008-2010).

2011		
January 26	boto	created
January 28	html2text	created
January	webpy/webpy.github.com	70 commits
	html2text	3 commits
	webpy/webpy	3 commits
	tor2web	1 commit
February 6	rtask	created
February 19	pytorctl	created
	torperf	created
February	torperf	8 commits
	html2text	4 commits
	pytorctl	3 commits
	rtask	3 commits
	tor2web	1 commit
	tweepy/tweepy	1 commit
	webpy/webpy	1 commit
March 4	https-everywhere	created
March 14	python-transparencydata	created
March	webpy/webpy	2 commits
	webpy/webpy.github.com	2 commits
	https-everywhere	2 commits
	sunlightlabs/python-transparencydata	1 commit
	html2text	1 commit
April	webpy/webpy.github.com	5 commits
	https-everywhere	1 commit
May	webpy/webpy.github.com	7 commits
June	naomifox/mass-email-delivery-code	10 commits
	webpy/webpy	4 commits
	webpy/webpy.github.com	2 commits
July	https-everywhere	8 commits
	naomifox/mass-email-delivery-code	4 commits
	webpy/webpy	2 commits
	webpy/webpy.github.com	2 commits
August 21	chdns	created
August	https-everywhere	8 commits
	tor2web	4 commits
	chdns	1 commit
	naomifox/mass-email-delivery-code	1 commit
(continued)		

Table 2: Swartz' commits and repositories on GitHub (2011-2013).

2011 (continued)		
September 20	<i>metamake</i>	created
September	https-everywhere	19 commits
	html2text	7 commits
	metamake	4 commits
	webpy/webpy.github.com	2 commits
	webpy/webpy	1 commit
October	https-everywhere	4 commits
	html2text	3 commits
	webpy/webpy	3 commits
	webpy/webpy.github.com	1 commit
November 10	<i>opencongress</i>	created
November	html2text	14 commits
	webpy/webpy.github.com	5 commits
	https-everywhere	1 commit
December 21	<i>html2text-service</i>	created
December 27	<i>sanitize</i>	created
December	naomifox/mass-email-delivery-code	17 commits
	https-everywhere	7 commits
	sanitize	4 commits
	html2text	3 commits
	webpy/webpy	2 commits
	webpy/webpy.github.com	2 commits
	cv/html2text-service	2 commits
2012		
January 6	<i>jinja2</i>	created
January	webpy/webpy.github.com	4 commits
	html2text	4 commits
	pallets/jinja	2 commits
February 27	<i>pybandit</i>	created
February	watchdog	35 commits
	webpy/webpy	21 commits
	infogami/infogami	1 commit
	pybandit	1 commit
	naomifox/mass-email-delivery-code	1 commit
March	webpy/webpy	10 commits
	webpy/webpy.github.com	3 commits
	tor2web	2 commits
	watchdog	1 commit
(continued)		

Table 3: Swartz' commits and repositories on GitHub (2011-2013).

2012 (continued)		
April	victorykit/victorykit	37 commits
	webpy/webpy.github.com	3 commits
	html2text	1 commit
	sanitize	1 commit
May	victorykit/victorykit	101 commits
	html2text	2 commits
	webpy/webpy.github.com	2 commits
	webpy/webpy	1 commit
June 25	aaronsw.github.com	created
June	pokayoke/pokayoke.github.com	19 commits
	victorykit/victorykit	17 commits
	aaronsw.github.com	1 commit
July 4	try.git	created
July	victorykit/victorykit	39 commits
	html2text	2 commits
	webpy/webpy.github.com	1 commit
	tor2web	1 commit
	pokayoke/pokayoke.github.com	1 commit
August 7	pusher.client.python	created
August 28	commentsareclosed	created
	commitron	created
August	victorykit/victorykit	35 commits
	victorykit/dudley	27 commits
	webpy/webpy.github.com	9 commits
	webpy/webpy	5 commits
	commentsareclosed	2 commits
	victorykit/commitron	1 commit
	pusher/pusher-http-python	1 commit
September	victorykit/dudley	22 commits
	victorykit/victorykit	22 commits
	html2text	6 commits
	victorykit/whiplash	5 commits
	webpy/webpy.github.com	1 commit
	webpy/webpy	1 commit
	commentsareclosed	1 commit
October	victorykit/victorykit	80 commits
	html2text	4 commits
	webpy/webpy	2 commits
	victorykit/dudley	2 commits
	victorykit/whiplash	1 commit

Table 4: Swartz’ commits and repositories on GitHub (2011-2013).

2012 (continued)		
<i>November 1</i>	<i>cube-client</i>	created
November	victorykit/victorykit	28 commits
	html2text	6 commits
	victorykit/dudley	2 commits
	tsileo/cube-client	2 commits
	naomifox/mass-email-delivery-code	1 commit
	webpy/webpy	1 commit
	webpy/webpy.github.com	1 commit
December	webpy/webpy.github.com	3 commits
	webpy/webpy	1 commit
2013		
<i>January 5</i>	<i>htmldiff</i>	created
	<i>jsonformat</i>	created
January	htmldiff	3 commits
	voxelbrain/jsonformat	1 commit
	victorykit/victorykit	1 commit

Table 5: Swartz' commits and repositories on GitHub (2011-2013).

A note about the conventions adopted here : projects (or repositories) created by Aaron Swartz on his account are not prefixed by an additional account name. This is in opposition to projects that he contributed to but either had not been created by him, or on his account, like **webpy**.

We use the symbol - to indicate no activity (and thus no projects).

Blanks below dates or months explicitly mean that it is repeated.

2.2 Projects and descriptions

<i>Project</i>	<i>Created</i>	<i>GitHub description</i>
watchdog	Apr 2008	The watchdog project. http://watchdog.net/
ghcontest	Jul 2009	contest.github entry http://contest.github.com/
webpy (f)	Mar 2010	web.py is a web framework for python that is as simple as it is powerful.
tor2web	Dec 2010	access tor hidden services thru the Web http://tor2web.org/
tweepy (f)	Dec 2010	A python library for the Twitter API. OAuth, complete coverage, streaming API
boto (f)	Jan 2011	Python interface to Amazon Web Services http://boto.cloudhackers.com/
html2text	Jan 2011	Convert HTML to Markdown-formatted text.
rtask	Feb 2011	
pytorctl	Feb 2011	
torperf	Feb 2011	
https-everywhere	Mar 2011	HTTPS Everywhere
python-transparencydata (f)	Mar 2011	Wrapper for TransparencyData.com API
chdns	Aug 2011	Consistent hashing based DNS
metamake	Sep 2011	simple make-based weblog platform
opencongress (f)	Nov 2011	Open Congress
html2text-service (f)	Dec 2011	A RESTful service to convert HTML into Markdown-like text
sanitize	Dec 2011	bringing sanity to world of messed-up data
jinja2 (f)	Jan 2012	The Jinja2 template engine
pybandit	Feb 2012	Python experiments in bandit algorithms
aaronsw.github.com	Jun 2012	
try_git	July 2012	
pusher_client_python (f)	Aug 2012	Python lib for adding Pusher support into your application
commentsareclosed	Aug 2012	
commitron (f)	Aug 2012	Monitor Github and RailsOnFire for commits and build status and update Skype.
cube-client (f)	Nov 2012	A Python client for Cube: Time Series Data Collection & Analysis
htmldiff	Jan 2013	Highlights the differences between two HTML pages.
jsonformat (f)	Jan 2013	

Table 6: Swartz’ repositories and their descriptions, with dates.

Many of these projects are so-called “forks”, this is to say copies of pre-existing projects (some well known, like `jinja2`, others less so). We signal this here accordingly with the apposition of the symbol (f).

With other projects it is more complicated.

In the case of **https-everywhere**, this is “*the Chrome port*” of the same software⁷. While **webpy** and **pokayoke** are forks of his own projects.

rtask is a mysterious little program with no description or documentation we could find. Commit comments hold “*first night’s work*”.

2.3 Languages and licenses

<i>Project</i>	<i>Language (main)</i>	<i>License</i>
watchdog	Python	AGPL-3.0
ghcontest	Python	Public domain
webpy	Python	Public domain
tor2web	CSS	
html2text	Python	AGPL-3.0
rtask	Python	
pytorctl	Python	Custom (inherited)
torperf	C	BSD-3-Clause (inherited)
https-everywhere	JavaScript	
chdns	Python	
metamake	Python	
sanitize	Python	BSD-2-Clause (inherited)
pybandit	Python	
aaronsw.github.com		
try_git		
commentsareclosed	Python	

Table 7: Swartz’ projects (non-forks) : languages and licenses.

When Aaron was free to choose licenses without restrictions, he picked either the Public Domain (this is true for his early projects in particular, **webpy** falls under this category) or the GNU AGPL v3 license (chosen for all of his later major projects e.g. **html2text**⁸).

Whenever he was free to choose a language, he consistently picked Python.

While none of these projects are marked as forks on GitHub, some of them appear to be nonetheless (i.e. they come from other sources than GitHub itself).

This includes **sanitize** whose README file holds :

sanitize (...) was originally written by Mark Pilgrim and is distributed under the BSD license.

⁷Based on the information provided by Peter Eckersley in an article published the day after Swartz’ death on the EFF website.

⁸For **ghcontest**, he picked the Public domain license (again), which may have been due to the particularities of this contest.

For this project a BSD license was used that – according to this text – has been inherited from the original author.

torperf also appears to be a fork from elsewhere, with the same conditions.

The secondary languages of **tor2web** are Python and Javascript (in order). Those of **torperf** Python and R.

3 Qualitative analysis

During 2008 Aaron Swartz created a single repository, **watchdog**, and continued to contribute to his pre-existing project **webpy** (at the eponymous account **webpy**).

His first 6 months on the platform, from April to September 2008, were entirely dedicated to **watchdog** (“*the watchdog project*” per its description). He committed to no other project.

What was the watchdog project? In the earliest (recorded) version of its website it was presented like so :

*We’re trying to build a hub for politics on the Internet. Our plan has three parts: [data, action, causes]*⁹

While Aaron’s presentation read

*Founder Aaron Swartz has been building web applications for far too long. He co-founded Reddit (since purchased by Conde Nast), Jottit, Open Library, and theinfo.org. His writing on technology and politics has appeared in Extra!, Wired, Personal Democracy Forum, and other publications.*¹⁰

His collaborators were Pradeep Gowda (listed as programmer), Kragen Sitaker (programmer) and Nathan Borrh (designer).

Starting with October 2008, he began to contribute to **webpy**; and from October to December of that same year committed to both, while **watchdog** remained his priority (based on the number of commits¹¹).

From January to April 2009, he alternated between both projects, with **watchdog** still a priority.

Between May and June of 2009 came a first period of inactivity since opening his account.

In September 2009 came another.

To explain these, we draw on other data and archives.

His inactivity on GitHub may be explained by the fact that in that same month of September he had been very active on his blog, *Raw Thought*, producing some of his best known and longest posts. They include among others : “On Finishing Infinite Jest” (September 16), “A Summary/Explanation of John Maynard Keynes’ General Theory” (September 22), and “Keynes, Explained Briefly” (September 24).¹²

Needless to say, these are both large books.

⁹<https://web.archive.org/web/20080420071534/http://watchdog.net/about/>

¹⁰Ibid.

¹¹It should be noted that this is an imperfect indicator, as 1 large commit may hold more changes than 10 small ones; to say nothing of hard to measure facts such as the respective difficulties of each task.

¹²“Why I Am Not Gay” (September 8). A post not unrelated to Keynes, who had and was married to a woman – to much surprise from his entourage – but had mostly had relationships with men; a problem of classification for modern categories. This is exactly the nature and content of this post, where Aaron tells openly about enjoying “hookups” with men and women alike.

So those are Keynes' prescriptions for a successful economy: low interest rates, government investment, and redistribution to the poor. And, for a time – from around the 1940s to the 1970s – that's kind of what we did. (...)

But, starting in the 1970s, the rich staged a counterattack. They didn't like watching inequality – and their wealth – melt away. There was a resurgence in classical economics, Keynes was declared to have been debunked

That month he published over 10 posts (compare with 4 in October, 3 in November, and 3 in December).

On July 30 2009 he created his second repository, entitled **ghcontest**, to participate in the GitHub Contest of that year.

His entry scored 990, placing him about in the middle of contestants. The best entry scored 2725.¹³¹⁴

History, this we cannot repeat or stress enough, fulfills an important role in that it helps us break with doubtful notions – a-temporal and a-sociological – such as those of “genius”; to say nothing of modern ones like “rock stars” that are the dismal products of an even more dismal industry.

But, it should come also as no surprise that members of those same communities have little to no affection or esteem for the humanities.

This is even more so as these same sciences represent one of the first and last sources of critic of them. One could look long, but always in vain towards computer science for answers that matter.

So Paul Graham, who knows nothing of them, which has not hindered him to speak with the assurance that only belongs to those who have the sad benefit of ignorance.

*The social sciences are also fairly bogus, because they're so much influenced by intellectual fashions.*¹⁵

– wrote this half-wit. From the social sciences he excludes history, doubly asserting his lack of knowledge of both, ignorant of current developments in both : as such he will know the benefit of being reminded of his own, and that of his “*milieu*”, like a historian of science wrote.¹⁶

From May to November 2010 came Aaron Swartz' longest period of inactivity.

In May he also was inactive on *Raw Thought*. What happened then? We don't know, but leave this as a note for others, to explore further.

We think he may have been working on **tor2web**, but not publicly.

In a December 2010 post he published “A Censorship-Resistant Web” (December 21) in which Tor and **tor2web** are mentioned; coinciding with

¹³<https://web.archive.org/web/20091202045539/http://contest.github.com/>

¹⁴<https://web.archive.org/web/20091202085144/http://contest.github.com/leaderboard>

¹⁵Graham 2005.

¹⁶Almost all major historians have been influenced by the social sciences, since the days of Bloch and Febvre at least, for the real (and selfish) reason that their advantages to them were, and proved simply too big to ignore.

the release of the software the same month (preceding it by 4 days to be exact).

Step four: Beyond the Web

We can help ensure this by operating at least one of each as a Tor hidden service. Because the operator of the service is anonymous, they are immune to legal threats. If the user doesn't have Tor, they can access them through tor2web.org.

Correlation with his blog activities on *Raw Thought* however is not infallible, and not enough. Other sources should be considered¹⁷.

—
On December 25 2010 came his third project : **tor2web**.

According to the information provided by GitHub, this was “*Built by @aaronsw @ioerror*”; **ioerror** being the account of, and pseudonym commonly used by Jacob Applebaum.

Two commits associated with him occurred on that same day :

dbaed82ac729c8ed3a602bbdf8cd3f75f52edf1a (12:20 AM UTC)
8dd59489e8de3ce2659d7326262be797b5fe415f (2:06 AM UTC)

While the website for this project itself holds :

*tor2web.org is a disruptive website brought to you by Virgil Griffith and Aaron Swartz*¹⁸

So far, this project's history and narrative has not included Applebaum. We leave this, too, as a note and reminder that further research is necessary.

—
Starting June 2011 he took an interest in a program called **mass-email-delivery-code** by Naomi Fox, and regularly contributed to it henceforth.

2012 marked a return to the **watchdog** project with 35 commits in February, abandoned for a while. And, again in the following month of March : 1 commit.

Another notable event of February was a commit to **infogami/infogami** (his old start-up)! A minor fix.

Starting mid-2012, he took an interest in **victorykit** (a platform “*for social change*” per its description) and made hundreds of commits towards it.

On June 2012 he started contributing to **pokayoke/pokayoke.github.com**, his own project. Traces and echoes of it can be found in his blog, in an entry published around the same time :

I've put together a new guide for developing software, from idea to architectural details. The idea was to combine all the good ideas I'd heard from various areas of software development into a single, concise document. (...)

The Pokayoke Guide to Developing Software

*I'm eager for suggestions and feedback.*¹⁹

¹⁷His Twitter account among others.

¹⁸<https://web.archive.org/web/20090124070150/https://tor2web.org/>

¹⁹“New: The Pokayoke Guide to Developing Software” (June 26, 2012).

A further analysis of this now compiled data will no doubt result in hitherto unexpected, unsuspected, unknown or underestimated information.

4 Word of caution

This does not represent a full picture of Aaron Swartz' activity on GitHub. Since his death, this platform has changed considerably, and many projects too (some deleted, or modified in some other major way).

For instance, his contributions to **DeadDrop** cannot be found in this list, as they likewise cannot be found on his Github page currently, and neither – all is linked – on the Github page of the project²⁰.

Only a search through archive.org may enable the recovery of some of these 'lost contributions'.

Presumably other of his contributions are affected. Perhaps many – it is hard to say, and an in-depth research would be needed.

Finally, what this research offers no window into is how funny and quirky Aaron Swartz was at times, or simple at others. Here are two examples among many found in the thousands of lines of code that he wrote :

*Through copious research I have discovered that purple is not
really a color. Call Dan Rather!*

and elsewhere :

couple bugfixes

5 Conclusion – outward causes turned inward

Aaron Swartz' life on GitHub reveals strangely intimate details about his life. – not so surprisingly to those who are accustomed to these platforms. They do in fact reveal intimate patterns, and habits.

They may and will no doubt provide much and unexpected information into other facets of his life. This we strongly expect.

Any biographer not doing a thorough review of such data, that are archives in the most classical sense, cannot pretend to exhaustion of sources.

It tells for instance about holidays taken, holidays observed (Christmas for instance), etc.

In 2008, for instance, Swartz' last commit was on Dec 16, 2008 (c8d5...); to resume only on 27th of January of the next year (2324...).

His biggest period of inactivity came in 2010, no activity from May to November of that year (except for 1 issue created for **tweepy/tweepy**).

²⁰<https://github.com/deaddrop>

What other projects did he work on during this time? Or did he prefer working on these projects locally before making them public (like `tor2web`, which suddenly makes an appearance on the 25th of December of that year)?

—
It may also help, either confirm or disprove, previous testimonies given about him.

His former partner Taren Stinebrickner-Kauffman wrote :

*over the last 20 months of his life, Aaron spent more time with me than with anyone else in the world. For much of the last 8 months of his life, we lived together, commuted together, and worked in the same office – and I was never worried he was depressed until the last 24 hours of his life.*²¹

This is in our opinion consistent with our data and findings.

To provide even more context for this : his last Twitter post was on January 8 (“5:03 PM”)²²,

Figure 2: Aaron Swartz’ Twitter account

His last blog entry that we could find was on November 1, “What Happens in The Dark Knight” :

²¹Stinebrickner-Kauffman 2013.

²²<https://twitter.com/aaronsw/status/288813125401186304>

As weve discussed, in Batman Begins 1960s-style full employment and antipoverty programs lead to skyrocketing crime while in The Dark Knight Rises 1980s-style tough-on-crime policies and neoliberal economics lead to a revolt of the economic underclass. The films are mirror images, one about the failure of liberal policies; the other about the failure of conservative policies.

Depression is commonly described as being associated with the loss of interest in previous (and previously enjoyed) hobbies.

From the archives we draw on here, his activities on GitHub, and others, no such thing can be said, and no such signs are found.

Aaron Swartz continued to program on a regular basis, up to his very last few days. – as attested again by his recorded online GitHub activities.

It is not consistent with other hypothesis such as for example that of a suicide linked to depression as surmised by some²³.

In fact, as we have shown, and as can now be verified, the periods – years and months – right before had been amongst his most productive.

—
These analyses, like those of perhaps the entire psychological profession, turn outward causes inwards; and mistake the social and sociological root causes of behaviors for what they are not : not a coincidence but a cause.

Economics was once called famously “the dismal science”. But, as for psychology and psychiatry, these doubtful disciplines of a most nefarious, cruel history, they are our abysmal sciences...

Instead of looking inside, their zealous door-to-door sellers may wish to look outside, and at the wider outside world; in which they would discover their true place : the ‘very bottom members of our society’.

In this outside world, in which we live, in the “*real world*” thus, Aaron Swartz had been victim of a society that mistook its heroes for its villains, and celebrates it villains as its heroes. – it too.

—
“*And, here I thought it was the peanuts that attracted the morally ambiguous crowd.*” Aaron would have understood, who had never belonged to the latter category.

He paid the price, and this is why papers and articles are written about him, and not them (except to damn them).

²³Publications like *The Atlantic* for instance.

Bibliography

—. 2019. “The lonely death of Aaron, the cowards at MIT.”

Davenport-Hines, Richard. 2015. *Universal Man: The Lives of John Maynard Keynes*. Basic Books.

Eckersley, Peter. 2013. “Farewell to Aaron Swartz, an Extraordinary Hacker and Activist”. January 12.
<https://www.eff.org/deeplinks/2013/01/farewell-aaron-swartz>

Graham, Paul. 2005. “Undergraduation”. March. <http://www.paulgraham.com/college.html>

Swartz, Aaron. 2008-2013. <https://github.com/aaronsw>

—. 2005-2012. <http://www.aaronsw.com/weblog/fullarchive>

—. 2007-2013. <https://twitter.com/aaronsw>

Stinebrickner-Kauffman, Taren. 2013. “Why Aaron died”. February 4.
<https://tarensk.tumblr.com/post/42260548767/why-aaron-died>

Whedon, Joss. 1999-2004. *Angel*.