

Digital Preservation

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“The future is but the obsolete in reverse”

- Vladimir Nabokov

“Who would have known that Post-its would outlive the floppy drive?”

- Jon Ippolito

var artScience = require('memory');



Goddess of Memory was the mother of all nine muses.
To innovate, we must know what came before.

The Pitch

Javascript developers!

You, too, can help preserve
our collective digital history.

Let me show you why
digital history is important!



The Path



Contemporary art curator



Digital conservator



Javascript developer



Person talking to you now

Artists Strove for Permanence



Roman, *Sleeping Hermaphrodite*, mid 2nd century AD

Since 1900: Built Not to Last



Pierre Huyghe, *Untitled (Liegender Frauenakt)*, 2012

Expanded Practices

Invention of New Media:

- Film
- Performance
- Installation
- Software
- Games
- + new techniques in painting and sculpture

Artists are purposefully making works that are ephemeral and entropic.

Expanded Practices



Anicka Yi, *Life is Cheap*, 2016 (At the Guggenheim now!)

Why? Our Weird Digital World

Images are now easily made and infinitely reproducible.

Real-life experience of a physical space or an interaction in the moment has become more rarified and precious.

So both to comment on and distinguish itself from the larger world, art has become about ephemeral interactions and experiences in physical space.

Art in the Digital World

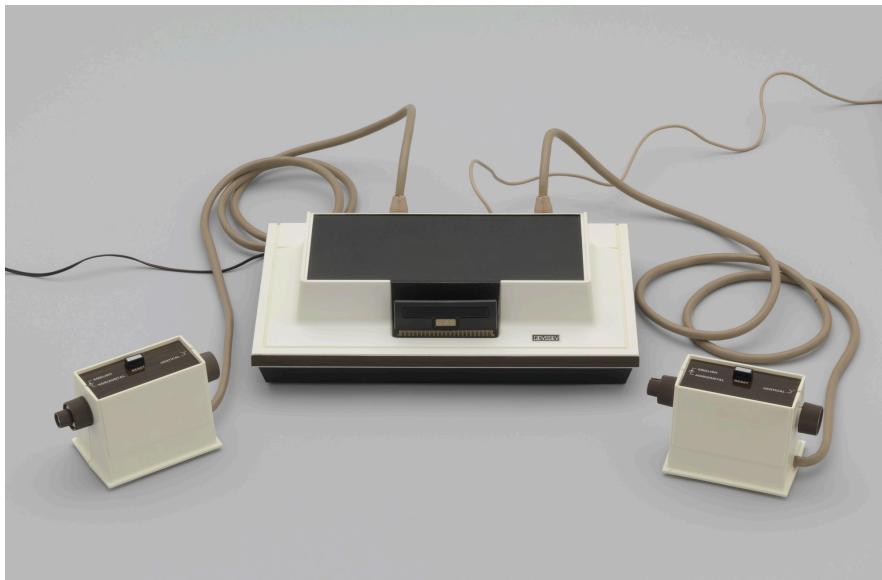


Jon Rafman, *KoolAid Man in Second Life*, 2010

What's this have to do with me?

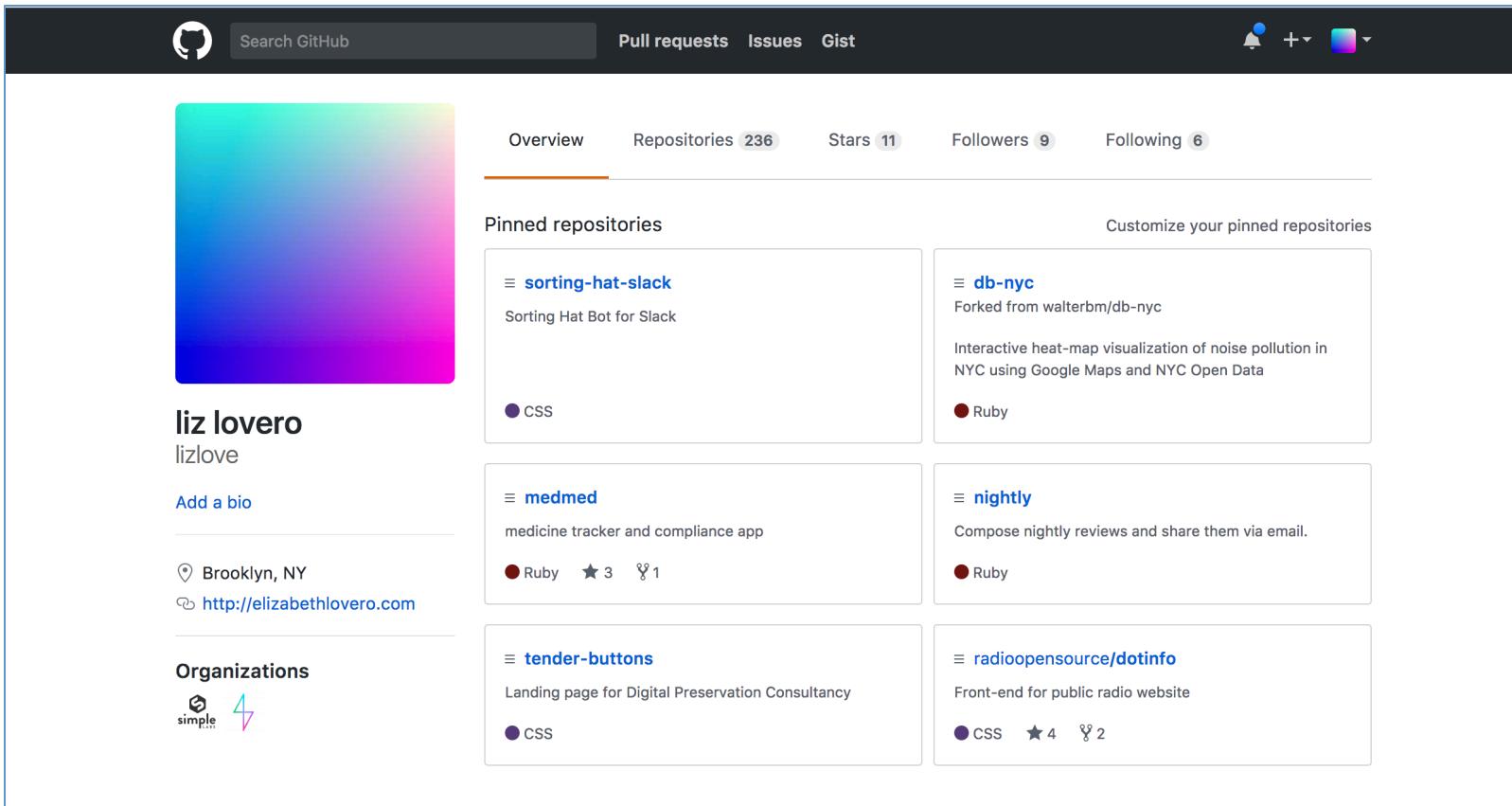


Everything Born-Digital is Vulnerable



Left to right:
Ralph Baer, Magnavox Odyssey, 1972
Nam June Paik, *TV Garden*, 1974 (2000)

Even Github



A screenshot of a GitHub profile page for the user `lizlovero`. The profile features a large, vibrant gradient background image. At the top, there's a navigation bar with icons for search, pull requests, issues, and gists, along with a notifications bell and a user dropdown.

The main profile area shows basic statistics: Overview, Repositories (236), Stars (11), Followers (9), and Following (6). Below this, under "Pinned repositories", are six repository cards:

- `sorting-hat-slack`: Forked from `walterbm/db-nyc`. Description: "Sorting Hat Bot for Slack". Languages: CSS. Star count: 3.
- `db-nyc`: Forked from `walterbm/db-nyc`. Description: "Interactive heat-map visualization of noise pollution in NYC using Google Maps and NYC Open Data". Languages: Ruby. Star count: 4.
- `medmed`: Description: "medicine tracker and compliance app". Languages: Ruby. Star count: 3.
- `nightly`: Description: "Compose nightly reviews and share them via email.". Languages: Ruby. Star count: 4.
- `tender-buttons`: Description: "Landing page for Digital Preservation Consultancy". Languages: CSS. Star count: 3.
- `radioopensource/dotinfo`: Description: "Front-end for public radio website". Languages: CSS. Star count: 4.

On the left side of the profile, there are sections for "Add a bio" (with placeholder text "lizlovero"), location ("Brooklyn, NY"), and website ("<http://elizabethlovero.com>"). There's also a "Organizations" section showing membership in two organizations, each represented by a small logo.

<https://github.com/lizlove>

Avoid the Metaphysical Illusion



Pushing up your code may feel transcendent, but it is not immaterial.

Very little materiality, is very very far from no materiality at all.

Software must be preserved in some physical form. The cloud is a data center.



Stills from Tyler Coburn, *I'm that angel*, 2011-

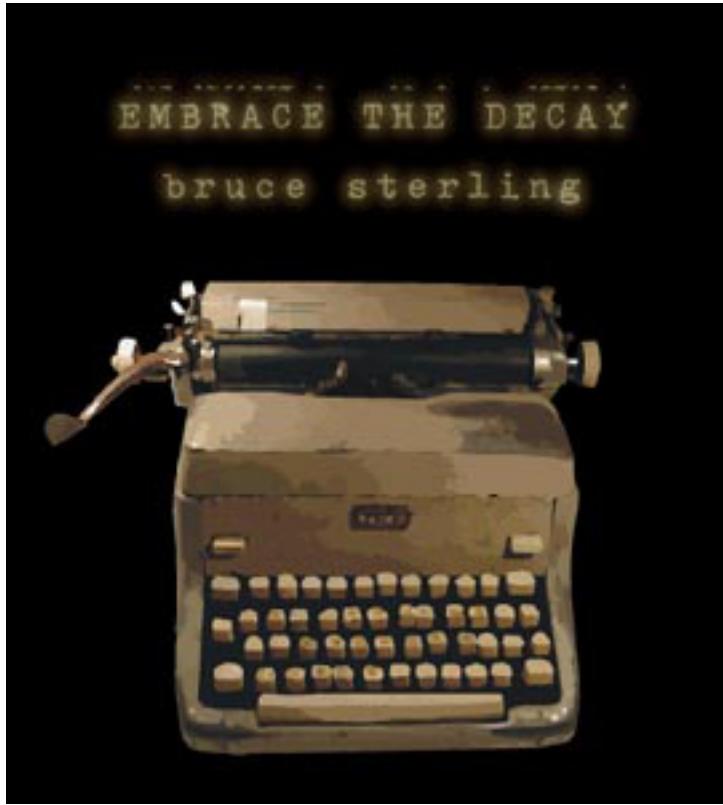
No Archival Software Formats

If you print something on acid-free paper with stable ink and put it in a dry, dark closet you can read it in 200 years.

No way to archive bits that will be readable in even 50 years.

Tape deteriorates and demagnetizes, CD's delaminate and get bitrot. Atomic storage works only at -196°C.

Dead Media List



The screenshot shows a web page from the Internet Archive's Wayback Machine. The URL in the address bar is <http://www.deadmedia.org/notes/index.html>. The page title is "Dead Media Project working notes". The date of the capture is October 19, 2007. The interface includes navigation arrows for SEP, OCT, and DEC, and specific dates 2006, 2007, and 2008. A search bar at the top right contains the text "Search This Site". The main content area is mostly blank, showing a large white space.

Figure 23: Dead Media Notes search engine

Bruce Sterling, *Embrace the Decay*, 2003. <http://www.deadmedia.org/modest-proposal.html>

(un) Dead Media

Table 13.1

Comparative Longevity of Various Formats as of 2013

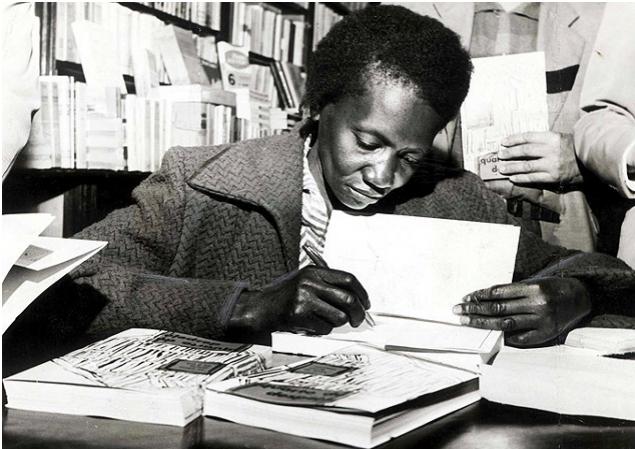
Format	Short-term	Medium-term	Long-term	Indefinite future
Text file	MS Word (.doc)	PDF, ¹ Open Document Format (.odt), Office Open XML (.docx) ²	TXT, HTML, RTF (Rich Text Format)	Nothing
Web application	Flash, Director (Shockwave)	Java	HTML, CSS, JavaScript	Nothing
Database	Filemaker, Access, Oracle	MySQL, PostGreSQL, NoSQL	XML (Extensible Markup Language), RDM (Relational Database Markup Language)	Nothing
Server script	A.I.R, .NET/C#	Java (servlets), Ruby	PHP, JavaScript, Python	Nothing
Spreadsheet	Excel (.xls)	Open Document Format (.ods), Office Open XML (.xlsx) ³	Comma-separated values (.csv)	Nothing
Vector image	Illustrator (.ai), Flash (.swf)	PDF, ¹ CGM (Computer Graphic Metafile)	SVG (Scalable Vector Graphics), EPS (Encapsulated Postscript)	Nothing
Raster image	Photoshop (.psd), GIF	JPEG	Bitmap, TIFF, PNG, JPEG 2000	Nothing
Audio file	Copy-protected CD	Windows Media Audio, MP3, AAC	Ogg Vorbis, ⁴ FLAC, PCM (Pulse Code Modulation), DTS-HD, WAV	Nothing
Video file	Copy-protected DVD, BluRay	QuickTime (.mov), Windows Media Video, MPEG4, ⁵ AVI	Ogg Theora, ⁴ WebM/VP9, Motion JPEG 2000, MXF (Material Exchange Format) JPEG 2000 ⁶	Nothing

Vanilla Javascript has
'Long-term' longevity for
user-facing display!

Production environments, browsers, and operating systems are another matter.

Remember left-pad ?

Only You Can Prevent the End of History



But I'm just a regular Jane

Wrong! The unique accounts and experiences of regular people are incredibly valuable to the historical record.



Being a developer in the early 21st century is a totally epic historical perspective!

Ok. Ok. How can I help?



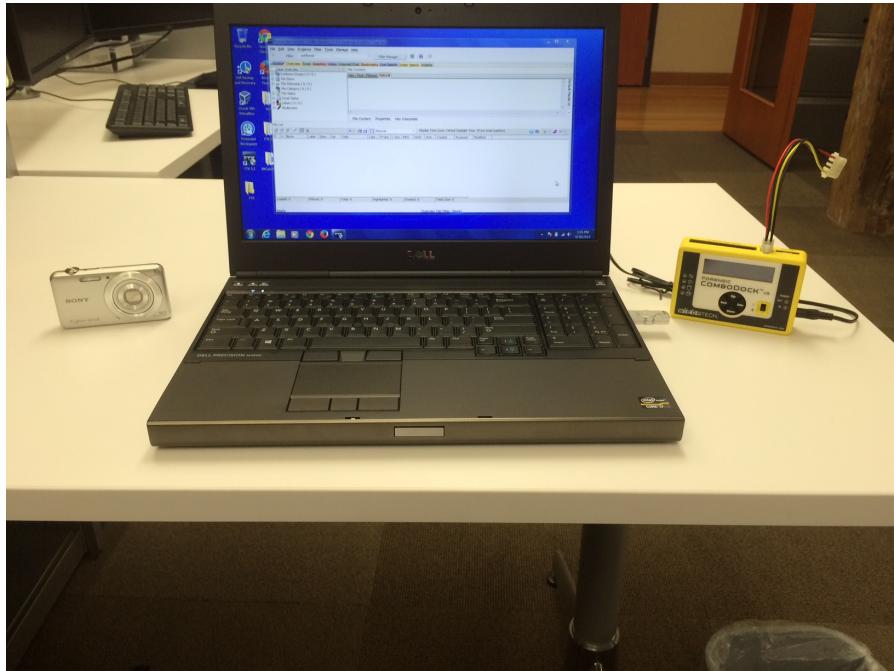
5 Easy Steps

1. One is never enough



- Back up your work!
- Image your old hard-drives and laptops using Bitcurator.

Disc Image with BitCurator



- Open-source forensics software built for libraries, archives, and museums
- Coupled with a write-protector, you can image nearly any drive without writing to the drive or powering up the device.
- Protects corrupted discs

BitCurator

2. Just Do(cument) It



- Document your code in a clear fashion that does not assume the reader is familiar with your context.
- Create documentation for other's work that you admire or rely on.
- Contribute to open-source documentation projects.

Rachel Simone Weil, *Femicom Museum*
<http://www.femicom.org/>

3. Join Generation Emulation

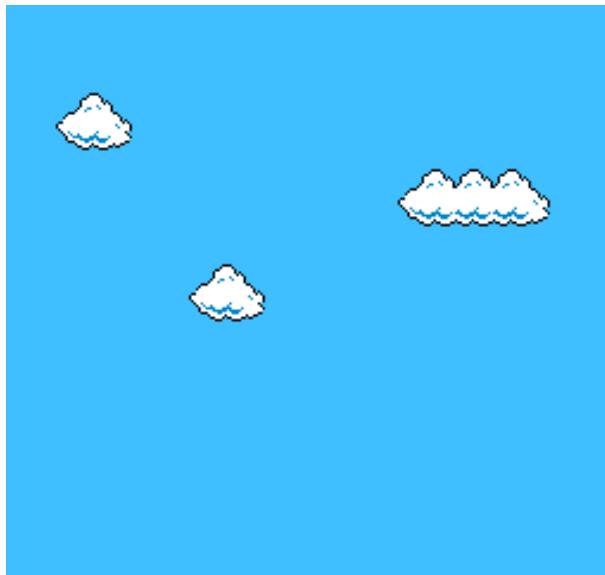


- An emulator enables the host computer to run software or use peripheral devices designed for another system.
Build your own or contribute!



- <http://oldweb.today/>

4. Fixity = Death & 5. Open-Source



- Migrate old work, if possible.
- Be variable in your approach.

Cory Arcangel, *Super Mario Clouds*, 2002

Conclusion

Only You Can Prevent the End of History.

1. Back up your data
2. Write documentation
3. Contribute to emulators
4. Migrate your work
5. Embrace open-source
6. See art



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