

# Aaron Straup Cope

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## Professional Objective

I have worked at **Flickr** [1] helping to build and nurture the beautiful monster that it became, made pretty maps at **Stamen Design** [2] , re-opened the **Smithsonian Design Museum** [3] re-imagining what it means for a museum to hold hands with the Internet and most recently built a high-quality, openly-licensed **gazetteer of all the places** [4] in the world at **Mapzen** [5] .

The promise of the Internet is to be a bridge for cross-pollinating peoples, ideas and communities. I am looking for opportunities to design and build the tools that will continue to realize the idea of the network as a public good.

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## Core Competencies

### Programming:

Go, Python, PHP, JavaScript, Perl, Java (sort of).

### System administration:

BSD/Linux, Apache/nginx, Elasticsearch/Solr, MySQL/Postgres, PostGIS, AWS (in as much as anyone can wrap their head around the scale of AWS...).

### Languages:

English, French.

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## Employment History

### Creator, Architect and Head of Engineering for Who's On First (WOF)

**Mapzen** [5]

June 2015-December 2017

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Creator, Architect and Head of Engineering for Who's On First (WOF), an openly licensed gazetteer of all the places and all their metadata in the world, ranging from continents to neighbourhoods and venues. WOF was published as a public resource and a series of API-based services and used internally by a variety of Mapzen services including Search (geocoding) and Tiles.

The goal of WOF is to provide high-quality and openly licensed location data with global coverage specifically designed for use with a broad range of applications, datastores and programming languages, while ensuring long-term durability and portability of both the data and the services.

In January 2018, Mapzen announced that it would cease operations. WOF **continues to operate** [6] as a community-driven open-data and open-source project at **whosonfirst.org** [4] . All of the data and source code continues to be developed and distributed through the **whosonfirst-data** [7] and **whosonfirst** [8] GitHub organizations, respectively.

To date approximately **60,000 words of theory and practice** [9] have been written about the project on the Who's On First weblog. A good introduction is the 2016 talk titled **Mapping With Bias** [10] and a detailed discussion of the project's goals and motivations is the 2015 blog post **Who's On First** [11] .

- *Designed the **overall data model and architecture** [11] for the project.*

- Designed, built and maintained public-facing services related to WOF including the **Spelunker** [12] and the **API** [13] and the initial version of the WOF editorial tools (code named "Boundary Issues")
- Designed, built and maintained all of the databases, deploy tools and software libraries for both public-facing and internal editorial workflows. Software was purposefully written in a variety of languages including **Go** [14], **Python** [15], **PHP** [16] and **JavaScript** [17] specifically to ensure that design decisions around the data modeling did not encode the biases of any one language or toolset.
- Managed the engineering team, contractors and oversaw day-to-day technology decisions.

## Head of Engineering, Digital and Emerging Media

### Cooper Hewitt Smithsonian Design Museum [18]

July 2012-May 2015

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Head of engineering and technical architect for all public facing and internal digital initiatives related to the re-opening of the Smithsonian Cooper Hewitt Design Museum in 2015. This work was documented in The Atlantic magazine's 2015 **The Museum of the Future Is Here** [19] profile and culminated with **The Pen** [20] an NFC-enabled stylus, custom designed and manufactured by the museum, given to every museum visitor.

The Pen allows visitors to collect objects on display and retrieve them post-visit as well as produce new works on multi-user interactive tables located through the museum. It works in concert with purpose-built API designed and maintained by the museum and enables both internal and third-party in-gallery experiences. Launched in March of 2015, The Pen has been in continuous use since then. As of **January 2018** [21] it has been given out to 350,000 visitors; used to collect objects 14 million times; and used to create over 300,000 designs.

The technical, manufacturing and institutional challenges (and successes) that were prompted The Pen are discussed at length in **Strategies against architecture: interactive media and transformative technology at Cooper Hewitt** [22], a formal paper presented at the 2015 Museums and the Web conference and **The Pendulum of Bespokiness** [23], a presentation delivered at the 2016 Bosch Connected Experience conference.

- Designed, build and maintained the **Cooper Hewitt collections website** [24] and **API** [25] which acts as a unified interface for all public-facing, internal and third-party integrations with the museum collection, including the Pen and features like **search by colour** [26]. The Collections website won the Best Research/Collections Website award at the 2013 Museums and the Web conference as well as the award for best Applications and API website at the 2013 American Alliance of Museums conference.
- Co-curator for the Smithsonian's first acquisition of code: **Planetary** [27], an interactive music player for the iPad. **(Complete press coverage of the acquisition is listed here.)** [28]
- Acted as technical liaison with the Smithsonian's Office of the Chief Information Officer (OCIO) on all matters relating to the Cooper Hewitt's digital and exhibition infrastructure.
- Managed the engineering team and oversaw day-to-day technology decisions.

## Internet Typist (and general layout)

January 2012-July 2012

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Combination self-employed and self-imposed sabbatical spent implementing and investigating the practice of archiving and of running shadow copies of popular social networking websites.

- **Parallel Flickr** [29] — a tool for backing up your Flickr photos and generating a database backed website that honours the viewing permissions you've chosen on Flickr. It was presented at the Internet Archive's 2012 **Personal Digital Archiving conference** [30].
- **Privatesquare** [31] — a "looking-glass archive" web application to record and manage a private database of foursquare check-ins with the option of recording them in a public service after the fact.
- **Parallel-ogram** [32] — a simple web application to create a local backup of Instagram photos and "likes" and to make that archive a living, breathing website of its own.

## Design Technologist

### Stamen Design [2]

2009-2011

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Senior developer responsible for taming source data and designing and implementing technical systems for a wide variety of clients and research projects. Also, maps.

- **Surging Seas** [33] (2012) — a project with **Climate Central** [34] to visualize the effects of sea-level rise and storm surges in the United States.
- **map=yes** [35] (2011) — a project with **MapQuest** [36] to demonstrate what their mapping APIs, and commitment to the OpenStreetMap project, affords to developers and designers alike.
- **prettymaps** [37] (2010) — an experimental interactive map composed of multiple freely available, community-generated data sources designed to explore and celebrate the edges of what is possible in web-based mapping.
- **Cheerio Maps** [38] (2010) — an experimental map to visualize housing data in the San Francisco Bay Area.

## Lead Engineer

### Flickr [39]

2004-2009

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Lead engineer for the **Flickr** [39] photo sharing/management web application; designed, implemented and maintained the geotagging and machinetag infrastructure; primary contact for security issues; primary contact for integration projects with its parent company Yahoo!.

- **Galleries** [40] (2009) — a way for users to curate up to 18 public photos or videos from other Flickr users into one place around a theme, an idea or "just because"; galleries were a way to encourage Flickr users to try and see their time and involvements on the site as something other than self-promotion or collecting view counts.
- **Flickr Shapefiles** [41] (2008) — we asked the question: "If we plotted all the geotagged photos associated with a particular location, would we have enough data to generate a mostly accurate contour of that place? Not a perfect representation, perhaps, but something more fine-grained than a bounding box." It turns out we did!
- **Machine tags** [42] (2007) — a lightweight and easy means for users to add extra semantics to their tags and to use those tags as a kind of key in to third-party services; there are currently over 2M tags with **foursquare** [43] venue IDs as well as many other smaller bespoke projects.
- **Geotagging** [44] (2006) — the ability for users to geotag their photos; there were 1M geotagged photos added in the first 24 hours and today there are over 300M geotagged photos.
- *Just keeping the site up (2005) — it was a very busy year.*

## Personal projects and activities

### Public speaking

2007-Present

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I have been **speaking publicly since 2007** [45] on a variety of personal and work-related subjects including Flickr, maps and cultural heritage. I am a frequent speaker at the **Museums and the Web** [46], **Openstreetmap State of the Map** [47] and **NACIS** [48] conferences.

A complete list of talks is available at <https://www.aaronland.info/talks> [49]

### go-iiif

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**go-iiif** [50] is a fork of the **iiif** [51] package that moves all of the processing logic for the **IIIF Image API** [52] in to discrete Go packages and defines source, derivative and graphics details in a JSON config file. There is an additional caching layer for both source images and derivatives.

## Brooklyn Integers

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**Artisanal Integers as a service** [53] . A very elaborate joke, but a useful one. The canonical text on artisanal integers is the **time pixels** [54] keynote from the 2012 **New Zealand National Digital Forum** [55] but a more approachable introduction is neverendingbook.org's **artisanal integers** [56] .

### prettymaps, Talk To Me exhibition (MoMA)

2011

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In 2011, the prettymaps project was **included** [57] in the Museum of Modern Art's **Talk to Me: Design and the Communication between People and Objects** [58] exhibition, in New York City. This was very exciting.

### Advisory Board, Built Works Registry

2011-2013

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In 2011 I was invited to be a member of the advisory board for the **Built Works Registry** [59] , a joint endeavor of the Avery Architectural & Fine Arts Library at Columbia University, ARTstor and Getty Research Institute funded by a three-year National Leadership Grant from the Institute of Museum and Library Services.

### prettymaps, 20x200 prints

2010-Present

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Starting in 2010, the prettymaps project was selected by the **20x200** [60] project for a series of limited-edition prints. To date **editions for ten cities** [61] have been printed.

### The Papernet

2007-Present

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**The Papernet** [62] is the name for an on-going investigation of how and why and where to bridge the digital and analog world. It was first introduced at the 2007 XTech conference, in Paris.

### Aaron's New York Times Widgets

2002-2010

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**Tools, and visualizations, for data-mining the New York Times.** [63] This project was stopped with the introduction of the New York Time's "pay-wall".

### The Mirror Project

2001-Present

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**The Mirror Project** [64] was one of the earliest community-driven photo-sharing websites to promote built to encourage and showcase "adventures in reflective surfaces". In a world before selfies...

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## Education

**Studies in Studio arts**, 1993-1997

**Nova Scotia College of Art and Design** [65]

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## Publications

Seb Chan, Aaron Straup Cope. "**Strategies against architecture: interactive media and transformative technology at Cooper Hewitt.** [66] ". Curator, The Museum Journal. 2015.

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Aaron Straup Cope, Christine Kuan. "**Imagining the Built Works Registry** [71] ". 2011.

Aaron Straup Cope. "**Buckets and Vessels** [72] ". Museums and the Web 2010: Proceedings. Toronto: Archives & Museum Informatics. 2010.

Aaron Straup Cope. "**The Interpretation of Bias (and the bias of interpretation)** [73] ". Museums and the Web 2009: Proceedings. Toronto: Archives & Museum Informatics. 2009.

Aaron Straup Cope. "**The API As Curator** [74] ". Museums and the Web 2008: Proceedings. Toronto: Archives & Museum Informatics. 2008.

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## Miscellany

Code samples and current projects are available for review on the [@straup](#) [76] and [@thisisaaronland](#) [77] GitHub accounts and the [@whosonfirst](#) [8] GitHub organization.

**I have been maintaining a personal weblog since 1999.** [78]

This document is available in the following formats : **Plain-text** [79] , **HTML** [80] , **PDF** [81] and **XML** [82] . The code used to generate these documents is available as **open source software** [83] .

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## References

Available upon request.

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## External links

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