

Experimental Data for the $A?B^*A$ Pattern in CSS: Inputs and Outputs

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Where to find it

■ Description

- DOI [10.1109/ICSME.2016.91](https://doi.org/10.1109/ICSME.2016.91)
- page 616
- © IEEE

■ Dataset

- <http://leonardpunt.github.io/masterproject/dataset-and-results.zip>
- MIT License

■ Ancestor

- <http://dmazinianian.me/conference-papers/fse/2014/06/16/fse14.html>
- <http://dmazinianian.me/publications/FSE'14/FSE'14-crawled.7z>

Experimental Data for the A?B*A Pattern in CSS: Inputs and Outputs

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The complete dataset is available under the MIT license from this web location: <http://leonardpunt.github.io/masterproject/dataset-and-results.zip>. This dataset is used to detect undoing style in CSS code. In total, this dataset contains 41 subjects. Each subject has its own folder, which contains the captured states, a `states.html` file, is used to load all captured states in one document, and a folder called `results`, which contains the detected undoing styles, the refactored style sheets and the detected semantic changes. The file `states.html` was used as an input for our detection tool [4].

Selection of subjects. In order to select representative real-world web applications, we used the empirical data used in the study conducted by Mazinianian et al. [2]. This data set includes 38 popular online web applications and is available online [1]. Besides the 38 subjects from the study of Mazinianian et al., two web applications developed by Q42 have been studied as well. The 41st subject is a new version of the subject "Gmail" from in the original data set. The complete list of selected systems follows:

Facebook	Pinterest	YouTube	Reddit
Twitter	Tumblr.com	YahooMail	WordPress.org
Outlook.com	Vimeo.com	Gmail	igloo
Github	Phormer	Amazon.ca	BeckerElectric
Ebay	Equus	About.com	ProToolExpress
Alibaba	UniqueVarieties	Apple.com	ICSE12
BBC	EmployeeSolutions	CNN	SyncCreative
Craigslist	GlobalTVBC	Imagur	Lenovo
Microsoft	MEC	MSN	Staples
Paypal	MSNWeather	9292.nl	Rijksmuseum.nl

Extraction of CSS styles and DOM states. Mazinianian et al. used the dynamic analysis features of Crawljax [3] to dynamically capture different DOM states of a web application. These DOM states are persisted to HTML files.

The HTML files contain inline and internal style sheets, together with links to external style sheets. In order to extract the external style sheets Mazinianian et al. developed an external CSS file extractor plug-in for Crawljax.

Note that the references to the external style sheets in the HTML documents need to be updated, because the extracted external style sheets are in a different location.

Issues with dataset. There are some problems with the dataset of Mazinianian et al., which we fixed by:

- renaming "Apple.ca" to "Apple.com" and "MountainEquip" to "MEC";

- removing a redirect from the Gmail system code which was fired in the absence of a session cookie and recapturing the intended state of the Gmail system again (these two subjects are named "Gmail original" and "Gmail fixed");

- refetching 18b91843bb4bcb07c2ba08a01b6b8a02b9eb4c50.css and 54c660b14dd08ca6b408f07de1f5080d251ae12.css from the "About.com" system, which were empty in the original dataset;

- similarly refetching the files d8c76b82abbac61a4a89b4000324c09b6413719.css and f20bbdc283941382159c1e12d65554f1bdc68c2.css from the "Alibaba" subject;

- excluding unused files: 167d8b047eb42d1f908b8e344141a24f333b18c90.css, a024af3f23a278289a1f50ac5d6b6598a76415a.css, b5f14865786216f67ae8a41ab1c1774aa955334.css, c7a368297aab3abc7d74e0ae421fc38dd18a048f.css and e54053a51b1eb8bae62e9bc76ad9351ea4f1d4c89.css from "ProToolExpress";

- removing the file `style.css` from "SyncCreative" since this file is a duplicate of `b4ad21b4c1ba99451234f5c3da9a501a504ac0fe.css`.

We have decided to leave three files empty in order to stay close to the original dataset: 91cab95b7f8d3800625c0789cd87c0e4180209.css from "Apple.com", 61dc696007ca3caeb54a2d0babb8ea932de60e21.css from "GlobalTVBC" and 0c6fedfab56593cd6d0ea0b8d8ee80454585b2af.css and "SyncCreative". The first one returned a File Not Found error and the last two returned a Forbidden error while crawling. However, we do not know if these were also the errors that occurred when the original dataset was collected.

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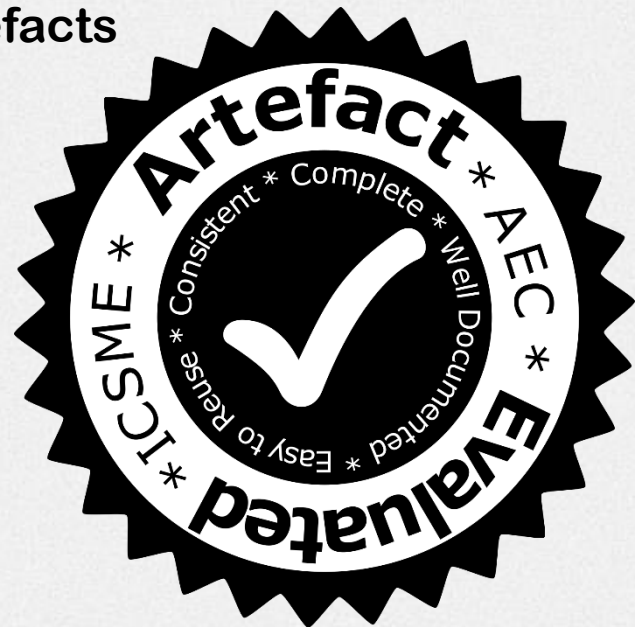
**“At Etsy 150 engineers
deploy a single
monolithic application
more than
60 times a day”**

21900
small revisions
per year

- Available at
 - <http://leonardpunt.github.io/masterproject/dataset-and-results.zip>
- Size
 - 23.4 MB packed
 - 171 MB unpacked
- 41 directories
 - index.html
 - states.html
 - css/*.css
 - results/*
- 38 sites from Mazinianian-Tsantalis-Mesbah, +2 proprietary, +1



- Mostly inherited everything
- Followed the same *crawling* process for new artefacts
- Renamed Apple.ca and MountainEquip
- Gmail problems (missing cookies)
- File Not Found errors
- Forbidden errors
- Empty yet neither Forbidden nor Not Found
- Unused files
- Duplicate files



- August 2016: Compiler Construction Summer school
 - CSS as a running example
 - <https://github.com/software-engineering-amsterdam/ccss/tree/master/2016/grammarware/ccss>
 - Test suite
 - 345 unique CSS files
 - Day 1: Learn Rascal
 - Day 2: Parse as many files as possible
 - Day 3: Write metaprograms...
-
- Conclusion: 10-100 files parsed unambiguously
 - Student assistants went up to 300.



- **Tools are not everything**
 - Respect your data
- **Web apps are way too liquid**
 - Like mining software repositories
 - ...without versioning
- **Thanks to Davood, Nikolaos and Ali!**
- **Workflow**
 - Fixed
 - Extended
 - Added results
 - Republished



*IEEE 32nd International Conference
on Software Maintenance and Evolution (ICSME 2016)*

BEST ARTIFACT AWARD

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Co-Authors of:

**“The A?B*A Pattern: Undoing Style in CSS
And Refactoring Opportunities in Presents”**

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