



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Some DH.ARC projects

Italia, Tomasi, Vitali, Di Iorio, Peroni

Digital Humanities Advanced
Research Centre

Summary

1. **PhiloEditor** - Paola Italia & Fabio Vitali
2. **Time Machine** - Fabio Vitali & Francesca Tomasi
3. **Digital Typography** - Fabio Vitali & Angelo Di Iorio
4. **Smart Structured Editor** - Angelo Di Iorio & Fabio Vitali
5. **DocuDipity** - Angelo Di Iorio & Fabio Vitali
6. **OpenCitations** - Silvio Peroni



1 - PhiloEditor

Paola Italia & Fabio Vitali

Colouring is a simple application of markup theory.

- Colouring is the markup of non-structural fragments in a document.
- Depending on the meanings you want, you end up with different semantics, i.e., colours, i.e., markup elements.
- A diff document represents the differences between two variants or versions of a document. It is a synthetic document whose most interesting feature is the list of modifications between them source variants.
- For instance, both *Promessi Sposi* by Manzoni and *Pinocchio* by Collodi show similar structures and histories, but completely different justifications for the differences.



1 - PhiloEditor

Paola Italia & Fabio Vitali

PhiloEditor is a markup colouring application that can be adapted to a wide variety of situations where scholars want to colour differences between versions & variants of a document.

CAPITOLO I

Quel ramo del lago di Como che volge a mezzogiorno tra due catene non interrotte di monti, tutto a seni e a golfi, a seconda dello sporgere e del rientrare di quelli, ^{vien} viene quasi a un tratto a restringersi e a prender corso e figura di fiume, tra un promontorio a destra, e un'ampia ^{costiera dall'altra parte;} riviera di rincontro; e il ponte, che ivi congiunge le due rive, par che renda ancor più sensibile all'occhio questa trasformazione, e segni il punto in cui il lago cessa, e l'Adda ^{rincomincia} ricomincia, per ripigliar poi nome di lago dove le rive, allontanandosi di nuovo, ^{lascian} lasciano l'acqua distendersi e ^{rallentarsi} allentarsi in nuovi golfi e in nuovi seni. La ^{costiera} riviera, formata dal deposito di tre grossi torrenti, scende appoggiata a due monti contigui, l'uno detto di san Martino, l'altro, con voce lombarda, il ^{Resegone} Resegone, dai molti suoi cocuzzoli in fila, che in vero lo fanno somigliare a una sega: talchè non è chi, al primo vederlo, purchè sia di fronte, come per esempio ^{di su le mura} dai bastioni di Milano che ^{guardano a} rispondono verso settentrione, non lo discerna tosto, ^{a un tal contrassegno} con quel semplice indizio, in quella lunga e vasta giogaia, dagli altri monti di nome più oscuro e di forma più comune. Per un buon ^{pezzo} tratto la ^{costa} riviera sale con un pendio lento e continuo; poi si ^{rompe} dirompe in poggi e in valloncelli, in erte e in ispianate, secondo l'ossatura ^{de'} dei due monti, e il lavoro dell'acque. Il lembo estremo, ^{tagliato} interciso dalle foci de' torrenti, è ^{quasi} pressochè tutto ghiaia e ciottoloni; il resto, campi e ^{vigne, sparse} vigneti, sparsi di terre, di ville, di casali; in qualche parte boschi, che si prolungano su per la montagna. Lecco, la principale di quelle

1 - PhiloEditor

Paola Italia & Fabio Vitali

A new interface is being implemented, but...

PhiloEditor 4.0

Opere ▾ Servizi ▾

? Login... Account ▾

Benvenuti in PHILOEDITOR: una piattaforma che permette di leggere testi che hanno avuto diverse redazioni d'autore, visualizzando le versioni successive e alcune particolari categorie di varianti.

I testi attualmente disponibili sono:



I Promessi Sposi di Alessandro Manzoni, nelle due redazioni del 1827 (Milano, Ferrario) e del 1840 (Milano, Redaelli).

Leggi qui i Criteri di edizione.

Le avventure di Pinocchio di Collodi, nelle due redazioni del 1883 ("Il Giornale per i bambini") e del 1890 (Bemporad).

Leggi qui i Criteri di edizione.



Nel menu in alto è possibile selezionare i capitoli delle opere (menu *Opere*) e le modalità di visualizzazione (menu *Vista*).

1 - PhiloEditor

Paola Italia & Fabio Vitali

To do:

- Improve usability
- Add more services
- Adapt to multiple versions (multilateral differences)
- Apply to many more documents of our cultural heritage



2 - Time Machine

Fabio Vitali & Francesca Tomasi

Time Machine is a very complex European project aiming to

- Improve speed, cost and quality of digitization of European cultural heritage;
- Support precise and harmonious characterization of temporal and geographical aspects of the digital representation of collections of cultural artefacts;
- Provide easy-to-use tools for scholars, students, citizens and tourists to navigate (in real reality or virtual reality alike) four-dimensional representations of digital collections of cultural artefacts;



2 - Time Machine

Fabio Vitali & Francesca Tomasi

- Currently the Time Machine project is in the CSA phase (Coordination and Support Actions), i.e., the planning stage of a very large scale type of European projects (*Flagships*: 10 years, 1B € investment)
- Unfortunately, the bad performances of other past *Flagship* projects has made it unlikely that new ones will be financed in the same form in the future. Yet the project has received very good reviews by the EU officers.
- Thus, the Time Machine will continue to exist and have a form, but it is quite unclear what that will be.
- At the moment, there are 32 founding members (among which UniBo) and more than 300 associated partners, that will become 2.000 by Feb. 2020.



2 - Time Machine

Fabio Vitali & Francesca Tomasi

In the CSA, UniBo is in charge of several themes:

- Data Modelling: to ensure easy interoperability between different cultural collections
- Data Acquisition: to ensure that new technologies in scanning, digitizing, and representing cultural artefacts can be made practical, fast and easy to use.
- Legal and Ethical Aspects: to ensure that participating organizations can be reassured that their collections are made interoperable and accessible within the most appropriate and correct context from the legal and ethical point of view.

To do:

- By October 30, 2019, draft extensive documents for a ten-year research trajectory on the themes above.



3 - Digital Typography

Fabio Vitali & Angelo di Iorio

The world of digital typography is neatly divided in two fairly independent realms:

- Paper-based media and the needs of printing presses creating paper publications (magazines and books)
- Screen-based media and the needs of web agencies creating browser-oriented publications (web sites and applications)
- In the middle, e-books, never really interactive, never really successful, always in an intermediate limbo of uncertain fate.

We want to identify a common pathway allowing to identify technologies and tools that help harmonizing and integrating these worlds.



3 - Digital Typography

Fabio Vitali & Angelo di Iorio

- Scrollable content (e.g., web pages) print very poorly
- Paginated content (e.g., PDF files ready for paper print) are displayed very poorly on screen-based media (esp. on small screens).

Yet, these two worlds can be made to converge:

- Pagination and scrolling can be made parametric to the rendering characteristic of some content, and high quality pagination can be reached
- On-screen pagination can be made authentic, professionally looking and flexible and similarly scrolling and interactive content can be used to generate professionally looking printed pages



3 - Digital Typography

Fabio Vitali & Angelo di Iorio

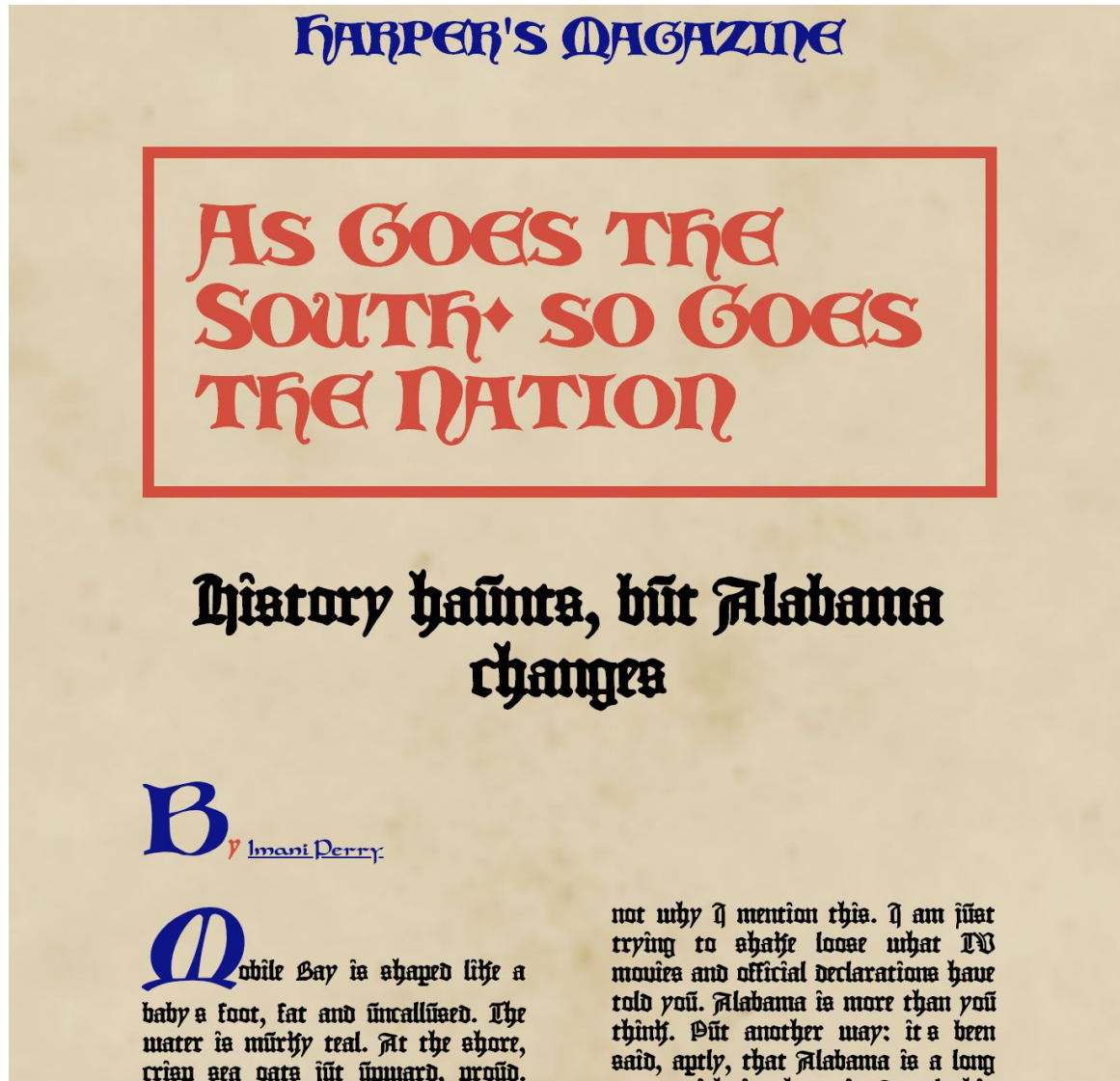
To do:

- Explore CSS paged media and CSS pagination engines and their sophistication and flexibility
- Identify patterns and best-practices of both on-screen and on-paper typography and abstract their qualities in a more general form
- Create browser-oriented libraries that provide on-screen scrolling and on-screen pagination that work correctly on paper, and add yet another dimension to the idea of responsive pages
- Study and reenact on screen-based media the art and practices and styles of five and a half centuries of paper typography.



3 - Digital Typography

Fabio Vitali & Angelo di Iorio



A modern
magazine article as
a medieval
manuscript



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3 - Digital Typography

Fabio Vitali & Angelo di Iorio

A modern
magazine
article as a
victorian
playbill

AS GOES THE SOUTH, SO GOES THE NATION

HISTORY HAUNTS, BUT
ALABAMA CHANGES

BY **IMANI PERRY**

Mobile Bay is shaped like a baby's foot, fat and uncalled. The water is murky teal. At the shore, crisp sea oats jut upward, proud. The seaweed lies liquid and listless. The city at the shore is old. In 1702, Mobile was the capital of French Louisiana, later

3 - Digital Typography

Fabio Vitali & Angelo di Iorio

A modern magazine article as a XIX Century newspaper

AS GOES THE SOUTH, SO GOES THE NATION

History haunts, but Alabama changes

By Imani Perry

Mobile Bay is shaped like a baby's foot, fat and uncalledus. The water is murky teal. At the shore, crisp sea oats jut upward, proud. The seaweed lies liquid and listless. The city at the shore is old. In 1702, Mobile was the capital of French Louisiana, later usurped by New Orleans. NOLA would also claim Mardi Gras and the reputation for being simultaneously the most European and the most African of US cities. All that you imagine of the Big Easy: the masks, the parades, the bacchanals, the slave pens, the beads? It's been in Mobile the longest, if not the biggest, on these shores. But I am not bitter at the status of New Orleans. That's not why I mention this. I am just trying to shake loose what TV movies and official declarations have told you. Alabama is more than you think. Put another way: it's been said, aptly, that Alabama is a long state with its head in Appalachia and its toes in the Gulf Coast—the gateway to the Caribbean and the Atlantic. Alabama is swampland, beach silt, mountains, cities and dirt roads, plump gourds hanging from trees cut down and hollowed out to house purple martins and fat finchlike birds called yellowhammers. It is a tessellated but uneven map of counties, events, senses that must be read, more than a little bit, with one's feet and not with one's predilections.

The year before I was born, in 1971, one of Mobile's native sons, Albert Murray, by then a celebrated jazz critic and essayist, published a book called *South to a Very Old Place*. The South was changing, and Murray, who had settled in Harlem, went back to see for himself. A Tuskegee graduate and career military man, Murray was a master of the second person. He roped the reader into his sight with Jamesian devices and riotously intoxicating scenes. Murray is my tar baby. His words and ideas stick to me even when I don't want them to. He tends to preach an Americana of which I am suspicious. But the South is changing again, and, like Murray, I want to tell it. And as the South goes, so goes the nation. He taught me that. Today, it seems we are collectively reverting to its

Department Store, Mobile, Alabama 1956, by Gordon Parks © The Gordon Parks Foundation

I arrived in Birmingham by air on Thanksgiving morning in 2017. Sometimes I have traveled by train, sometimes by bus. But mostly by air. I have been walking down the long yellow-lit hallway of the Fred Shuttlesworth airport long before it was named after Birmingham's civil rights leader. In the early years, I would be dressed like the girl in the "Department Store" photograph, in crinolines and lace socks and patent-leather shoes. As time went on and I grew older, I traveled in jeans and then in yoga pants. Instead of me being in tow, my own children are now in tow.

Still, every time I step off the plane I am disoriented. My eyes are not prepared. The airport looks brand spanking new. It is at odds with my personal memory and the public memorial both. For the nation, as Montgomery lives in 1956, Selma is frozen in 1965, and Birmingham is stuck in 1963—the hoses, the children, the singing—right there just like that forever. It's a half-truth lie. I know because I have been going home and leaving home almost all my life. History haunts. But Alabama changes.

Almost everything looks different. Except the frame houses and the green. Not tropical green or pine green but bright insistent green. Our house is still yellow like it was in 1964. Our steps are red but now cracking. Once there was a swing set, a dog, and a fruit tree out back. Ask now, and some will say it bore peaches, and others, pears. I have recently thought kumquats. My aunt Thelma has called it a strange fruit. One that hadn't been seen anywhere (around these parts) before. That tree is dead. But the pecan one remains. We have strong hands and can crack a nut by pressing two together, tight, until one buckles and then both can be opened.

Sometimes the nuts are shriveled and dusty inside, but sometimes the meat is thick and bright. Inside the shell is a substance of contradiction. Like the jazzman Sun Ra, who claimed he was not of this earth but from outer space when he was really from around the way. I could ride my bike from my house to his in a few minutes, but if I didn't have the address written out on a piece of paper in my hand I would ride right by it without knowing it. It is just a Birmingham, Alabama, home like the others: to a one rectangular and triangular, in soft cool or earthy colors.

Sun Ra named his 1966 album after Birmingham's nickname, the Magic City. When I hear it, I can see the children of 1963 running out of school toward the march to freedom, dreaming big. This is like the way I can see



Left: Black Monolith II: (Homage to Ralph Ellison the Invisible Man), mixed media: acrylic, molasses, copper, salt, coal ash, chocolate, onion, herbs, rust, eggshell, razor blade, by Jack Whitten © The artist. Courtesy the artist's estate and Hauser & Wirth. Photo by John Berens.

Right: Denim and cotton work-clothes quilt, by Mary Lee Bendolph © Souls Grown Deep Foundation, Atlanta/ARS, New York City/Art Resource, New York City. Photo by Pitkin Studio

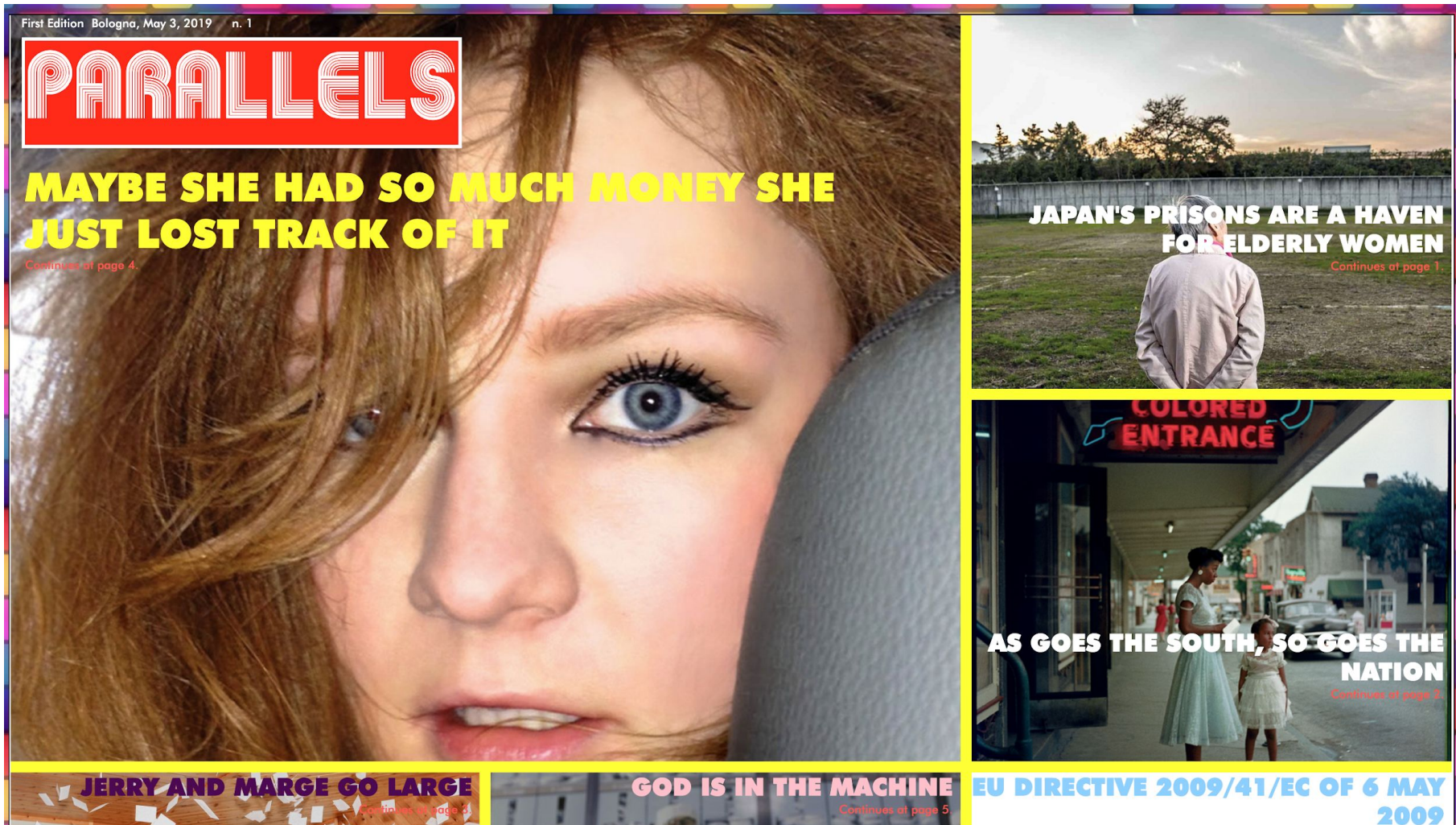
In recent years, as much as 15 percent of the Black voting population in Alabama was disenfranchised because of past convictions. Black suffrage, a right recognized only fifty years ago, has been aggressively suppressed and must still be valiantly fought for. My grandmother asked me if it was Election Day on her deathbed, and that tells you something about how precious the vote is. This is one of many reasons the campaign for Randall Woodfin registered differently than the campaign for Jones. It was more weighty, especially now, when the Confederacy sentimentalists see their white horses reared up in the White House and salivate. Randall Woodfin is someone new from a very old place. But for the accident of history, he might have been like Harris or Shuttlesworth. But instead, in 2018, he is mayor. And although there have been Black mayors in Birmingham for decades, and Birmingham is now a Black city, his election harkens back to the election of the first Black mayor, two years before his birth, in 1979.

Richard Arrington's win was precipitated by the Birmingham police's killing of a twenty-year-old Black woman named Bonita Carter with three shots to her body. The cop responded to a report of a dispute at a convenience store involving an acquaintance of Carter's

3 - Digital Typography

Fabio Vitali & Angelo di Iorio

A modern magazine article as a 1980 tabloid



3 - Digital Typography

Fabio Vitali & Angelo di Iorio

- CSS Paged Media allows designers to render XML/HTML content as high-quality PDF **for printing**
- The produced PDFs might not be fully satisfying:
 - widows, orphans, white space, punctuation, etc.
- We are investigating the maturity of **CSS formatters**
 - metrics to check the quality of paginated content
 - automatic toolchain to check these properties
 - testbed on real articles and books, via **specialized CSS**



4 - Smart Structured Editor

Angelo di Iorio & Fabio Vitali - with ALSTOM

- A lot of equal (or almost equal) content exist across documents and across projects
 - Not only in ALSTOM, not only for technical documentation
- We studied a pattern-based data model (called ADF) to represent documents and reused content
- SSE is a user-friendly **template-based** editor for writing technical documentation based on ADF



4 - Smart Structured Editor

Angelo di Iorio & Fabio Vitali - with ALSTOM

The screenshot displays the Smart Structured Editor interface. At the top, there is a menu bar with 'Document', 'Edit', 'Insert', and 'View'. Below the menu is a toolbar containing various icons for document manipulation, such as saving, undo, redo, and text formatting. A yellow notification banner at the top of the editor area states: 'A newer version of template(s) are available. [Update Template](#) x'. The main content area shows a template for a legal notice, with a blue header bar indicating 'TEMPLATE: #legalnotice'. The content is structured into sections: '1. Legal Notice' (with a sub-header '1.1. Conditions of use' and a text block), and '1.2. Data Privacy' (with a text block). The text in the '1.2. Data Privacy' section reads: 'The data controller is ALSTOM Holdings. In accordance with the provisions of the French Data Protection Law No. 78-17 of 6 January 1978 as amended. ALSTOM has filed a declaration with the French'.

Document ▾ Edit ▾ Insert ▾ View ▾

Icons: Save, Undo, Redo, Lock, Eye, Bold, Italic, Underline, Superscript, Subscript, Bulleted List, Numbered List, Indent, Outdent, Image, Table, Link, Unlink, Print, Refresh, Template, Checkmark

A newer version of template(s) are available. [Update Template](#) x

TEMPLATE: #legalnotice

1. Legal Notice

TEMPLATE: #conditions-of-use

1.1. Conditions of use

By entering the ALSTOM portal and using ALSTOM's websites, the portal user (hereafter referred to as «the User») accepts the terms and conditions contained in this notice.

TEMPLATE: #data-privacy

1.2. Data Privacy

The data controller is ALSTOM Holdings.

In accordance with the provisions of the French Data Protection Law No. 78-17 of 6 January 1978 as amended. ALSTOM has filed a declaration with the French



4 - Smart Structured Editor

Angelo di Iorio & Fabio Vitali - with ALSTOM

To do:

- Test on non-technical documentation
- Support for multilingual documents
- Improve MS Word importer
- Explore real-time collaborative editing



5 - DocuDipity

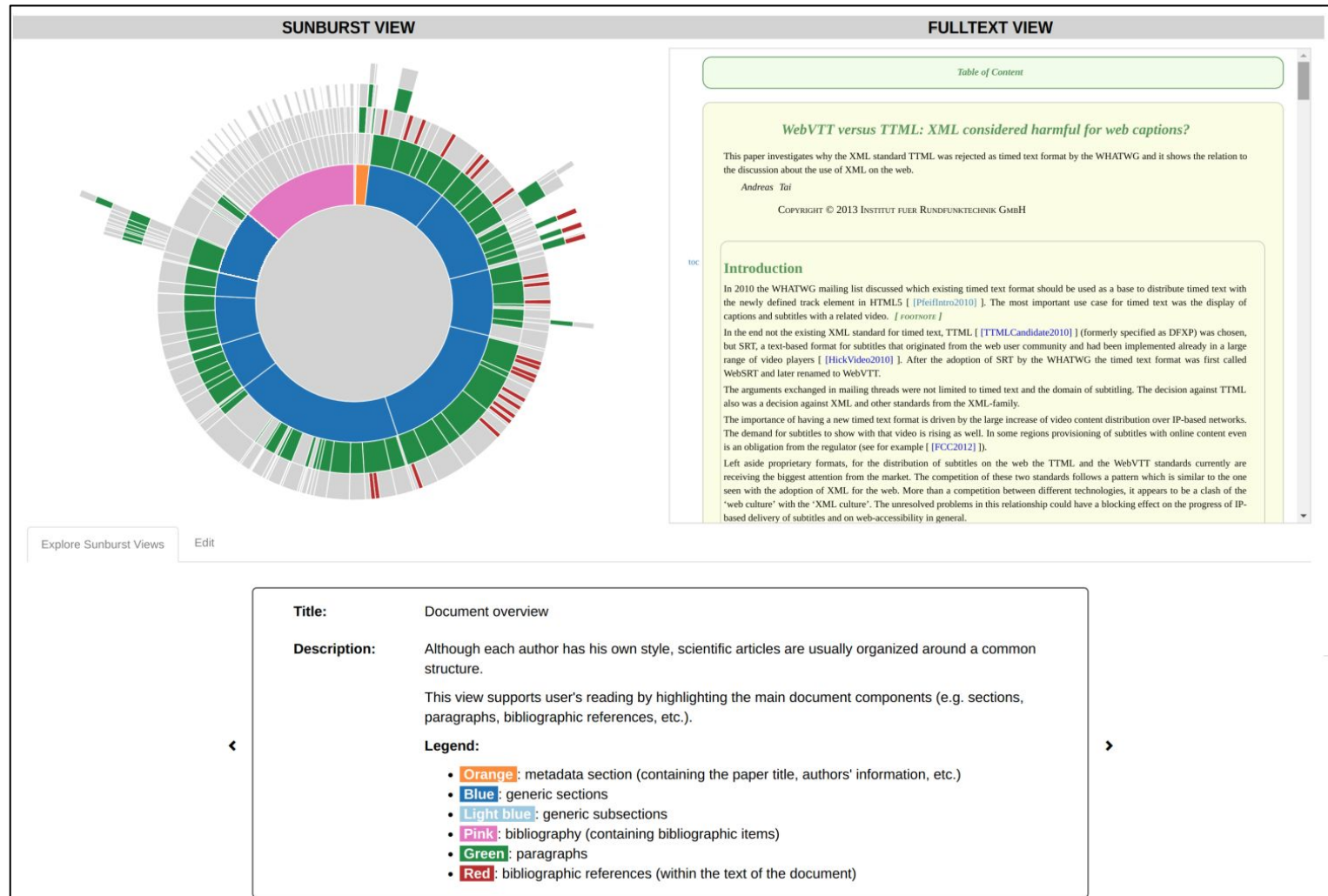
Angelo di Iorio & Francesco Poggi & Fabio Vitali

- Users can exploit **alternative visualizations** beyond the traditional sequential reading for **exploring** and **digging into** documents
- DocuDipity is a Web-based tool that combines a **SunBurst view** and a text flow in a friendly environment for **discovering** (unexpected) **traits of documents**





5 - DocuDipity

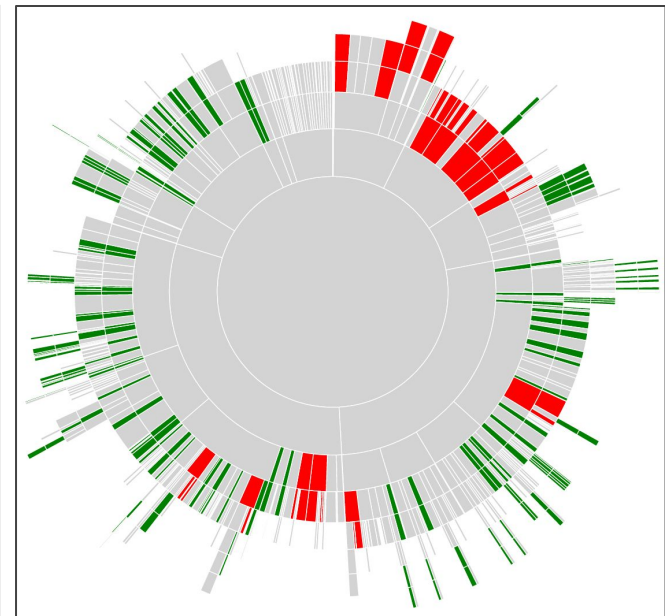
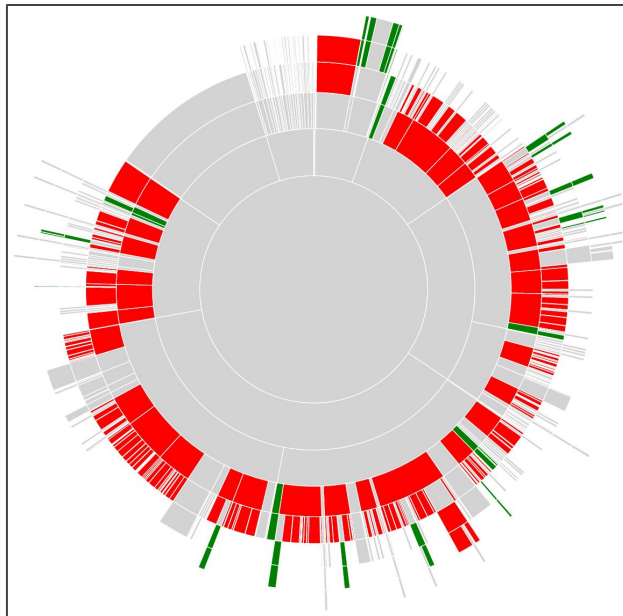
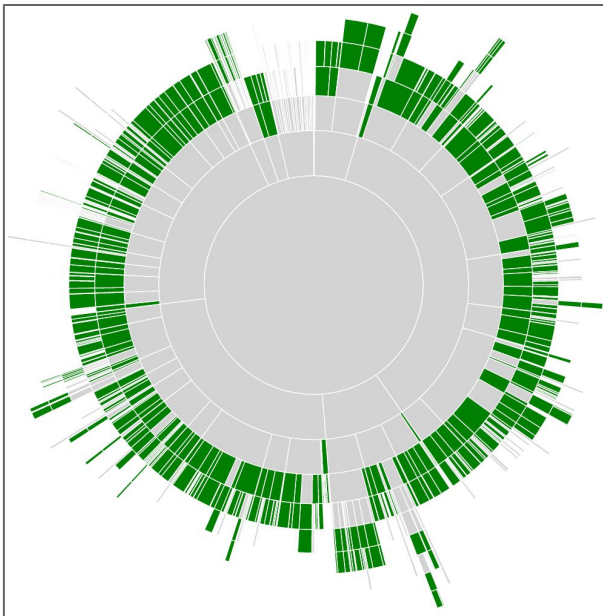
Angelo di Iorio & Francesco Poggi & Fabio Vitali



5 - DocuDipity

Angelo di Iorio & Francesco Poggi & Fabio Vitali

-  Short paragraph (less than 400 characters)
-  Long paragraph (more than 800 characters)



5 - DocuDipity

Angelo di Iorio & Francesco Poggi & Fabio Vitali

To do:

- Invent and test new rules and use-cases
- Explore other documents besides research articles
- Explore an authoring environment for rules
- Integrate further visualizations



6 - OpenCitations

Silvio Peroni

<https://tinyurl.com/open-citations-dharc2019>



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