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**International typography symposium
Nancy, campus Artem, 6-7 may 2014**

A printed document can be digitized in two different ways: either as a static image, in which case it tends to remain faithful in appearance to the original page it is reproduced from; or, in instances where an Optical Character Recognition (OCR) process is applied, it can be converted into a text format that is both editable and searchable, but whose typographic style may significantly differ from the original. One also observes that the older the document, the more difficult its automatic conversion through OCR tends to become. In comparison, an intermediate mode that would faithfully reproduce the typography of a document, while embedding dynamic text, could provide researchers with unprecedented possibilities with regards to the transcription of ancient texts. With this goal in mind, the Atelier National de Recherche Typographique is currently working on a multidisciplinary research programme at the crossroad between computer sciences, humanities and design, in partnership with the Loria (a computer science research department based in Nancy), and the Virtual Humanist Libraries programme of the CESR in Tours.

Can we conceive an OCR workflow that generates typefaces 'on the fly', from scanned pages of text? What degree of accuracy could then be achieved? And to which extent could we automate the type design process?

The symposium Automatic type design, which will be held in Nancy on 6–7 May 2014, will attempt to answer some of these questions by bringing together engineers, developers, historians and designers. The themes under discussion will include :

- **Optical character recognition applied to ancient documents: data extraction, segmentation, inventory and comparative analysis ;**
- **The encoding and the standardization of missing characters ;**
- **The subjective interpretation of printed type by a designer: the revival ;**
- **The objective interpretation of letterforms through image analysis techniques ;**
- **Parametric fonts, technologies for detecting the outline of a character, and for determining its underlying structure ;**
- **The creation of innovative software for digital typography.**

Lectures will be in French and in English.

Pioneers of digital typography (Jacques André, Richard Southall) will interact with experts in encoding and image analysis techniques (Johannes Bergerhausen, Bart Lamiroy, Jean-Yves Ramel) as well as with some of the most innovative software creators currently in activity (Erik Van Blokland, Frederik Berlaen, Simon Egli, Pierre Marchand, Yannick Mathey & Louis -Rémi Babé...).

New technologies, as well as promising projects in the field of programmatic type design, will be presented, including Superpolator 3, Prototypo, and Metappolator.

Recognition of typographic shapes

The lectures will be given in French or in English, without translation. Moderation and questions will be in both languages.

9h30

Introduction

Thomas Huot-Marchand

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9h45

**Jacques André (FR),
OCR and Renaissance “typèmes”**

Conference in french

Today, softwares allow us to go very far in the recognition of old printed characters and the creation of database to store, compare, etc. However, there’s a lack of standardization in the naming of these entities. The Unicode “character” concept is too limited to deal with the reality, and the typographic “glyph” too general. We propose then an intermediate concept, the “typème”. From many examples of printed matter from Renaissance – including books of arithmetic, of medicine, almanacs, up to specimens or fonts – this concept is specified while showing the problems that are inherent in the material (influence of handwritten signs, allographs, polysemy, trials and printing errors, misuse of type, etc.). We then present ICAP (Projet d’Inventaire des Caractères Anciens), ongoing project at the Centre d’Études Supérieures de la Renaissance in Tours, and its relationship with MUFI (Medieval Unicode Font Initiative).

After a PhD in “numerical calculation” in Nancy, Jacques André joined a team of researchers in linguistics at the CNRS and spent ten years in a research and development center of a large American computer manufacturer. He joined INRIA where he was responsible for software engineering and editing, which lead him to structured documents. After a stay at EPFL in Lausanne, he specialized in digital typography (with, in particular: the Didot project, RIDT symposium, EP symposium, magazines like Cahiers Gutenberg or Documents numériques, etc.) and publishing old documents. Retired for ten years, Jacques André gave a more historical look at his studies and recently published (with Christian Laucou) a History of typographic writing - the nineteenth century (Ed. Perrousseaux)

10h30

Jean-Yves Ramel (FR)

**Paradiit. Exploitation of the redundancy of forms
for content analysis and transcription of early printed books**

Conference in french

We present in this lecture some of the work done under the Paradiit project conducted, financed by two successive Google awards, in collaboration with the Centre d’Études Supérieures de la Renaissance (CESR) in Tours. Our project aims to make available to researchers in the field of “digital humanities” a set of interactive tools for better analysis, indexing and transcription of old printed books. In this perspective, we believe that it is necessary to produce interactive tools exploiting metadata indexing, perceptual (image oriented) as well as semantic (historical content and bibliographic record).

In this context, a new engine has been developed for the extraction of content elements and the structural analysis of digitized pages. This software allows automatic identification and extraction of various content elements that may appear in old books and of interest to historians (characters, initials, portraits, handwritten notes in the margins...).

Regarding aid to transcription, unlike most OCR softwares, the developed algorithms (Retro software) proceed by analyzing the redundancy of forms of extracted images. This technique does not recognize the characters separately and independently of other similar groups, but forms clusters without seeking to identify anything. Once built, it becomes possible to analyze and exploit the clusters to obtain a transcript of most of the text in just a few clicks. This information on the redundancy of forms inside the books may also be used to make typographic analyzes.

Jean-Yves Ramel is Professor of Computer Science at Polytech Tours. He is head of the “Reconnaissance des Formes et Analyse d’Images” team in the Informatic laboratory in Tours, and his current research activities focus on the processing and indexing of digital images (images of documents or medical images). Jean-Yves Ramel had previously obtained his PhD in Computer Science from INSA Lyon where he has been a lecturer for 4 years. Within the University of Tours since 2002, he took part in many national and international projects. Jean -Yves Ramel has obtained in 2010 and 2011 two Google Digital Humanities Awards to support Paradiit project in collaboration with the CESR Tours, that intends to produce tools exploiting the redundancy of forms present in texts to produce new tools and knowledge helping the treatment of early printed books.

Tuesday 6 may 2014

11h30

**Johannes Bergerhausen (DE),
Digital Cuneiform**

Conference in french

In the Designlabor Gutenberg Institute in Mainz, a group of three typographers developed a digital cuneiform character, including 1,063 glyphs. Johannes Bergerhausen will present the development process, the discussions with specialists, and the specific issues between pictographic, ideographic and phonographic characters in the oldest writing system in the world.

Prof. Johannes Bergerhausen, born 1965 in Bonn, Germany, studied Communication Design at the University of Applied Sciences in Düsseldorf. From 1993 to 2000, he lived and worked in Paris. First he collaborated with the Founders of Grapus, Gérard Paris-Clavel and Pierre Bernard, then he founded his own office. In 1998 he was awarded a grant from the French Centre National des Arts Plastiques for a typographic research project on the ASCII-Code. He returned to Germany in 2000 and, since 2002, is Professor of Typography at the University of Applied Sciences in Mainz. Lectures in Amiens, Beirut, Berlin, Brussels, Dubai, Frankfurt, London, Paris, Prague, Rotterdam, San Francisco, Weimar. Since 2004, he is working on the decodeunicode.org project, supported by the German Federal Ministry of Education and Research, which went online in 2005. Semester of research 2007 in Paris.
www.decodeunicode.org

Tuesday 6 may 2014

14h

**Pierre Marchand (BE),
Nancy / Fonzie**

Conference in french

Rooted in both activist energy and commissioned work. Nancy/Fonzie is rather a field for experiments than a proper software component. It draws its strength mainly from its cultural context. Each iteration of the program being tied to an event or the expression of a fantasy.

OSP / Dingbat Liberation Fest @ My.Monkey

Speculoos / fremok (comic fonts, pseudo random)

Speculoos / architectures wallonie-bruxelles inventaire 2000-2010 (univers else)

OSP / Royal College of Arts (sans guilt)

Constant / Verbingen:Jonctions (reading machine)

OSP / Ecole de Recherche Graphique (workshop)

OSP / Seoul Typojanchi

— **First era: Nancy**

At this point the program was an effort to automate vectorization of prepared images (grid) in order to ease making of fonts out of hand made lettering. Apart from speeding up the process, it made it possible to explore a wide range of parameters.

— **Second era: Fonzie**

Merged with Tesseract (OCR engine), the program allowed us to wander in the landscape of our definitive fantasy, to make books off books, retaining their artifactness and in the same time injecting a substantial amount of digital culture. Hence finding means to go through legacy without romanticism.

Pierre Marchand

- former artist
- interest in print making
- interest in computing
- free software hacking
- fontmatrix
- Open Source Publishing

Tuesday 6 may 2014

14h45

Erik van Blokland (NL)

On digitization

Conference in english

This presentation is about a small experiment on digitization of letterforms. A single scanned image was shared with type students, colleagues, professionals and interested designers. The analysis of the data brings some interesting results. Erik van Blokland will also present Superpolator3.

Erik van Blokland runs lettererror.com, a small font foundry (FontFont, House Industries) and a typographic design studio. He develops niche tools for type design and font production and has been involved in the development of the UFO (for font sources) and WOFF (for font binaries) formats. He is a senior lecturer at the TypeMedia master at the Royal Academy of Arts in Den Haag.

www.lettererror.com

www.superpolator.com

15h30

Pause

Tuesday 6 may 2014

16h

Bart Lamiroy (FR)

Re-Typographe: thought exchange between document image analysis and typographical interpretations

Conference in french

In this talk we will present some preliminary experiments and thoughts on how tools for the analysis of images can be built on to reinterpret fonts used in documents from the Renaissance. The idea is to deconstruct instances of specific typefaces (i.e. from scans of real printed documents) into as plausible as possible "modern" typographic interpretation hypotheses and to identify the resonant echoes between state-of-the-art document image processing algorithms and those interpretations. In other words, identify robust and useful algorithms that would allow extracting semantically significant measurements and models from scanned ancient documents that would allow expressing the used typefaces in a modern typographic language.

Bart Lamiroy is Associate Professor at the Université de Lorraine, and member of the QGar team of the LORIA Lab. He received his M.Sc. (1994) and Ph.D. (1998) from the Institut National Polytechnique de Grenoble. He has a broad experience in Machine Perception and, over the years, his research topics have ranged from Content Based Image Retrieval over Visual Servoing to Document Image Analysis. He is currently focusing on measuring and modeling performance analysis of machine perception induced interpretation algorithms. The recent re-opening of the Atelier National de Recherche Typographique on the ARTEM campus has led him to focus on typographical interpretation of document images.

Automatic type design

9h30

Alice Savoie (FR),

**From metal to phototypesetting to digital:
the evolution of the type design process**

Conference in french

Alice Savoie will discuss the influence of technological evolutions on typeface design. In particular, her presentation will focus on the decisive period between the 1950s and the end of the 1970s, when metal type gave way to phototypesetting, and later to digital technologies. The place of the type designer within the type production and distribution process will be discuss, as well as the new design opportunities and challenges faced by designers at a period of technological upheaval.

Alice Savoie is a type designer and a researcher specialized in the history of typography. Since 2013, she is teaching at the Atelier National de Recherche Typographique in Nancy and in the post-graduate course “typographie et langage” at the Esad Amiens. She graduated from the École Estienne in Paris and from the University of Reading in the UK, and collaborates with various design studios and foundries including Monotype (UK), Process Type Foundry (USA) and Tiro Typeworks (Canada). Her work involves the design of custom typefaces for branding and publishing purposes, as well as the design of multi-script faces including Latin, Greek, Cyrillic and Hebrew. She is finishing in 2014 a PhD thesis at the Department of Typography & Graphic Communication at the University of Reading, in collaboration with the Musée de l'imprimerie in Lyon. Her research focuses on the design of typefaces in France, the UK and the USA during the phototypesetting era.

10h15

Richard Southall (UK)

The dematerialization of type

Conference in english

In numerical photocomposition, the physical elements of traditional photocomposing machines – character selection mechanisms, sizing lenses and image positioning mechanisms – are all replaced by their virtual equivalents. Similarly, the character images on the photomatrix are replaced by numerical specifications for their shapes.

Richard Southall's presentation examines the history of this dematerialization, from the pioneer scanned-matrix and digital machines of the late 1960s to the launch of PostScript and the Apple LaserWriter in the mid-1980s.

Richard Southall was born in London in 1937. He took his first steps in the type manufacture at Crosfield Electronics in North London in 1965, where he worked first on matrix specification for the Photon-Lumitype family of photocomposing machines and later on the development of photographic matrix-making systems. In 1974 he joined the Department of Typography & Graphic Communication at the University of Reading, where he designed a series of fonts for the direct digital generation of movie subtitles on broadcast television. Between 1983 and 1990 he spent two years at Stanford University, and worked at Xerox research centres in Palo Alto and Cambridge. In the mid-1990s he made digital fonts for computer-driven display systems which demanded both high decipherability and small pixel sizes. In his last large project, from 1995 to 1998, he made use of his experience at Stanford to write programs in the Metafont language that realized Ladislav Mandel's Colorado family of typeface designs as digital fonts, and routines in the TeX language that used the fonts to format example pages for telephone directories published in the western United States. His book "Printer's type in the twentieth century" has been published in 2004.

Wednesday 7 may 2014

11h30

Frederik Berlaen (BE)

More tools, please!

Conference in english

Frederik Berlaen is a type designer with a love for programming and scripting. After studying graphic design at Sint-Lucas in Ghent, where he got the passion for pure black & white type, he went to study typedesign at the Royal Academy of Art (KABK) in The Hague.

He successfully got a Master Degree at the postgraduate course Type & Media in 2006. His final project was not a type family but an application which studies the broadnip and pointed pens, called Kallculator. The app could generate thousands of typefaces. Frederik Berlaen works under the name of TypeMyType providing font services, programming and teaching at Sint-Lucas Ghent and at ECAL in Lausanne.

www.typemytype.com

robofont.com

Wednesday 7 may 2014

14h15

Yannick Mathey & Louis-Rémi Babé

Prototipo, from sketch to code

Conference in french

Prototipo is an open-source online application that allows to control the design of a complete typeface using more than twenty sliders, to produce a wide range of different styles, from classical to experimental shapes.

Began in 2009 with the programming language Processing by Yannick, the project has been relaunched in 2013 with the arrival of Louis-Rémi Babé that by providing technical expertise helped reinvigorate the project: the alpha version allowed to play with letters, the version in preparation will create generative fonts, allow users to design their own templates, creating a new way of conceiving the design of super-families.

Yannick Mathey is a specialist in nothing and curious about everything. It was during his last year of studies at ESAD Strasbourg that he decided to learn the basics of letters & code, and to develop the alpha version of prototipo. He works nowadays in the same vein, discover new things every day, designing and selling interactive platforms (and more) by the way.

Louis-Rémi Babé's passion is to create websites and web-apps. He fell in love with JS in 2004 and has contributed to patches and features of jQuery 1.X (if you have browsed the web in the past 9 years, you've used some code he wrote). He's an active mozillian since 2009 and was an intern at Mozilla Paris in 2011. He's helped starting a local JS meetup: LyonJS.

prototipo.io

15h

Simon Egli (CH)

Chicken and Eggs. Designing large font families & systems

Conference in english

Large font families are on demand these days. Using interpolation models and Metafont to enhance the font design process is the idea behind the opensource project Metapolator. Simon Egli is proposing a font design environment to synthesise fonts without loosing the traditional approach on letter design.

After an apprenticeship in typesetting, Simon Egli studied typographic design at the "Fachklasse Typografischer Gestalter" in Zurich. Subsequent to a two-year phase of hands-on work in the graphic arts industry, he went on to study Graphic Design at the University of Art and Design Zurich (ZHDK) and graduated from Central Saint Martins (CSM) in London in 2006. He is since collaborating with various design studios, including Stefan Sagmeister in New York. His work also includes visual identities for clients as MTV, a modular type-kit for TESS supermodel agency in London, a self-generating typeface (available at gestalten.com) and fonts commissioned by Google. He has won awards such as The Most beautiful Books Switzerland, D&AD and got nominated for the Swiss Federal Design Prize.

His latest projects deal mainly with parametric type design:

www.metaflop.com

www.metapolator.com

www.simonegli.com

16h

Conclusion

Automatic type design

Tuesday 6 may

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NANCY-ATTEM

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