TUG@BachoTEX 2017 abstracts

Editor's note: Slides and other related information for many of the talks are posted at `http://tug.org/tug2017`.

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TEX annoyances — what is in the way to a full production environment

Paulo Ney de Souza

Several minor (and annoying) issues stand in the way of TEX to be a complete production environment. We will go over the most important ones, discuss how some of them should be addressed soon, and explore some directions on the way to solve the rest.

TEX Production — ePub, the new target

Paulo Ney de Souza

DVI was once the output of TEX, we have since moved to PS, PDF, and now on the verge of a big change — ePub. The talk will explore how we got here and what we can learn from the way the open source TEX echo system works.

ConTEXt: tutorial/workshop (for ConTEXt beginners)

Willi Egger

Especially since this year's BachoTEX was a joint event with TUG, we wanted to invite all TEX users to an introduction to ConTEXt. As with any typesetting system offering possibilities to handle virtually any project, ConTEXt is a huge system. During the workshop we can only lift the veil a little bit. The workshop will be a hands-on session in which we will start playing with basic elements to create a document. Towards the end of the workshop, there will be a chance to work on a small project — a single-sided document containing all the elements to build an invoice. I am glad to lead this workshop, and look forward to meeting everyone who is interested.

Colorful fonts, an update and peek into the future

Hans Hagen, *Taco Hoekwater*

Co-presenters: Lorien Otten, Lara Brandligt and Teun Otten.

Kids communicate in compact language and pictures like emoticons (emoji). These pictures are often also not that detailed, which suits recent studies in The Netherlands showing that drawings that kids make themselves become less detailed. The Polish font gurus responsible for the free lm and gyre fonts never got to providing kids their beloved pictograms so that goal has to be achieved differently.

The ConTEXt community has the so-called cow-fonts, now available as a color font. After ten years, the "koeiletters" font is ready for an update. The new version uses OpenType technology to combine the existing four PostScript Type1 fonts into a single TrueType font.

A follow up on this will be an emoji set designed by Duane Bibby. Taco will convert the drawings (roughs) to proper color outline fonts, Hans will make sure they work well in TEX, while the (first) subset will be chosen by our future users: kids.

During this presentation Taco will first introduce the technology (for which he will use the latest cow fonts as an example), then Hans will quickly tell a bit about how the color font technology is supported in LuaTEX, and then Lorien, Teun and Lara will challenge the audience to tell them which little pictures make sense.

DocVar: Manage document variables

Zunbeltz Izaola, *Paulo Ney de Souza*

The package `docvar` helps to manage DOCument VARiables. Those are pieces of information about a document (mostly books) that are common to a collection of documents (a book series), but different in each particular case. They may be, for example, the title of the book, the name of the author, the subtitle, ... This package helps to define new variables and use them. Planned features include the inheritance of the value when a docvar is not defined and transformation of the variable value when the docvar is used. We present the main ideas of the package and its ongoing implementation.

TEX at secondary schools — an idea to be taken up by GUST

Anna Beata Kwiatkowska, *Jerzy Ludwichowski*

We will present an idea floated by Anna: GUST should provide on its web site a collection of TEX helper materials that could be used at secondary schools.

Initially the site would be targeted at the pupils studying at the Liceum i Gimnazium Akademickie, under the care of Nicholas Copernicus University of Toruń, one of the best secondary schools in Poland. Anna teaches there in computing and is also a staff member at the NCU's Faculty of Mathematics and Computer Science.

We hope to spur a discussion on how to tackle such a specific group.

Automating binary building for TEX Live
Mojca Miklavec

TEX Live binaries are built once per year for about 20 different platforms by a number of volunteers and never get updated during the year. This is a good compromise between users' demand for reasonably new binaries, stability and the burden on volunteer builders and packagers.

The ConTEXt community on the other hand strongly depends on the availability of the latest LuaTEX binaries at any given time. There are also occasional requests for the latest binaries of XETEX when new features get implemented.

We have recently set up a build infrastructure that can automatically build TEX binaries after every commit for a number of platforms, send emails when builds break, show reports and make the binaries available to users.

We will present our solution which gives us the freedom to run the builds much more frequently, to detect build problems earlier and to distribute newer binaries to users much faster.

One rule to break them all
Mojca Miklavec, Arthur Reutenauer

For almost ten years we've been in charge of the repository of hyphenation patterns for TEX, dealing with all technical and legal matters connected with their support by macro packages and their inclusion in distributions. Little consideration, however, has been so far given to the general principles of hyphenation for the different languages that are supported, and that's what we now would like to present, by finally giving the definitive answer to the great question: one rule to break them all.

Through The Looking Glass — and what Alice found there ...
Frank Mittelbach

Continuing the quest for automatically finding optimal pagination of documents the journey takes us now to the fairy land of objective functions, callout constraints, layout templates and other mystical creatures and a Queen that cries "Faster! Faster!" because "... it takes all the running YOU can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

We will explore how fast we must run to enter that world.

LATEX Restaurant
Przemysław Scherwentke

This is a review of the book „LATEX, książka kucharska." ("LATEX, a Cookbook.") We show why this is a good cookbook. We look at some recipes. We suggest some changes in the decor.

Hackaton: Documenting LATEX packages
Damien Thiriet

The aim of this workshop is to revise, correct or extend the CTAN documentation of your favoured LATEX package.

Participants could also prepare an entry for a LATEX package for the `pakietomat.wordpress.com` project (in Polish). We would also appreciate collective testing, improving and extending of already existing entries.

An example of a humanist scholarly book
Andrzej Tomaszewski

A long, long time ago, during a BachoTEX, throwing black-and-white slides from a slide projector at the public I presented a book which left the printing house exactly 20 years ago. In reply to BachoTEX goers' demand I'll again describe the design process for the scholarly edition of Ovid's poem "Halieutica", this time using color PDFs.

[Editor's note: We'd like to draw special attention to the slides from this talk, which include many beautiful images of fonts and layouts from the book. `http://www.gust.org.pl/bachotex/2017-pl/presentations/atomaszewski-1-2017.pdf`]

Variable and color OpenType fonts: chances and challenges
Adam Twardoch

In March 2015, the OpenType font format specification version 1.7 was released. This was a major extension of the spec, which added support for the "MATH" table for mathematical typesetting, as well as support for three storage formats for multi-color glyphs: "COLR/CPAL" which combines pre-existing monochrome outline glyphs into multi-color glyphs, "CBDT/CBLC", which uses PNG bitmaps to store multi-color glyph images, and "SVG", which stores multi-color glyphs as a mixture of complex vector graphics (with gradients, strokes and transparencies) as well as bitmaps.

Throughout 2016, a working group consisting of five large companies (Apple, Adobe, Google, Microsoft and Monotype) and a few invited experts (John Hudson, Erik van Blokland, Adam Twardoch) worked on another major extension to the standardized font format: OpenType Font Variations. In

September 2016, the results were presented at the ATypI Warsaw conference: OpenType version 1.8 added support for variable glyphs and metrics via the "gvar" table, backwards-compatible to the TrueType GX Variations extension which was introduced in 1993 by Apple but never gained any traction, and the "CFF2" table, which provides a similar mechanism for PostScript-flavored fonts and replaces the previous "CFF" table. The "sbix" table was also added, which uses PNG bitmaps for multi-color glyphs, much like the "CBDT" table.

Thus, in the last two years, OpenType has changed massively. In this talk, Adam Twardoch will present the new additions to the OpenType font format and its sibling ISO/IEC 14496-22 international standard, and will comment on both the chances and the challenges in introducing those changes into the TEX world.

STIX, Fira, Noto and friends: beautiful new open source fonts

Adam Twardoch

In the last few years, Google, Mozilla and Adobe have worked with a number of professional font foundries large and small, including Monotype, Tiro Typeworks, Huerta Tipográfica and others, to bring a flurry of high-quality, professional font families available under the SIL Open Font License, the de-facto standard license for open source fonts. While in the past, most open source font projects were created by technical organisations, non-designers, liguists and hobbyists, the 2010s saw the birth of quality type designs never previously seen in the open source realm.

In this talk, Adam will present a selection of his personal highlights of font families that not only look good, but are free for use on any project, and include ambitious character sets or typographic extensions, making them suitable for academic and scientific typesetting.

CORDIDA! Collaborative Opensource Rapid Digital Internet Documentation Authoring

Adam Twardoch

Since 2011, FontLab Ltd. has been working on a complete rewrite of the company's main commercial software product, FontLab VI — a font editor for professional type designers. As FontLab's Director of Products, Adam Twardoch has been managing the authoring and publishing of the massive technical documentation that will accompany the released app.

Adam has spent the last two years researching various workflows that would allow the FontLab team to write content in a collaborative way, oversee the progress of the content creation, and have an automated, transparent, extensible and manageable process of creating the final documentation in HTML and PDF formats. The workflow should avoid proprietary formats and tools, and should favor well-documented formats and techniques that have a large and stable user base. The workflow should allow continuous integration on local machines and remote servers, and should allow the person responsible for the production to "intervene" at any point of the production process.

In the end, Adam has settled on a workflow that involves Markdown as the source format, Github as the authoring and collaborative front-end, the MkDocs package that uses the Python Markdown implementation to produce a multi-page HTML website from a set of wiki-like Markdown documents, as well as the commercial Prince XML engine to produce PDF. Adam has written and open-sourced a number of tools that help in the process.

In this case study talk, Adam will present his key requirements for the process and the strengths and weaknesses of a multi-format, multi-language, multi-tool setup that he has adopted. In particular, the author will show why he didn't use TEX so far, theorize on where he could have used portions of TEX, and ask whether he still can use TEX in some way.

10 years of OpenType math font development

Ulrik Vieth

Font development has always been a major topic at BachoTEX conferences, culminating in the development of Latin Modern and TEX Gyre fonts in OpenType format for use with Unicode engines such as LuaTEX and XƎTEX.

In the past 10 years, ever since it was introduced, the focus has been on developing OpenType math fonts complementing existing text fonts. In this talk, we will review what has been achieved and what remains to be done.