

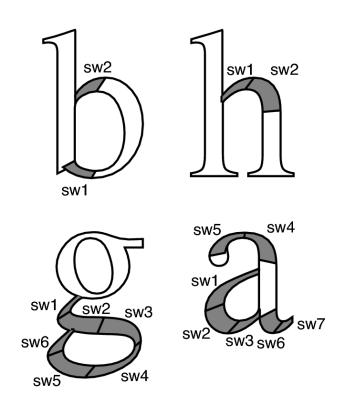
Alternatives to outline representations: Parametric fonts based on shape components

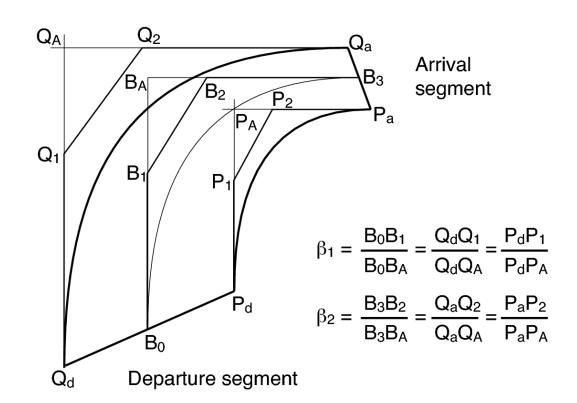
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Brno, 21.06.2012



The sweep component

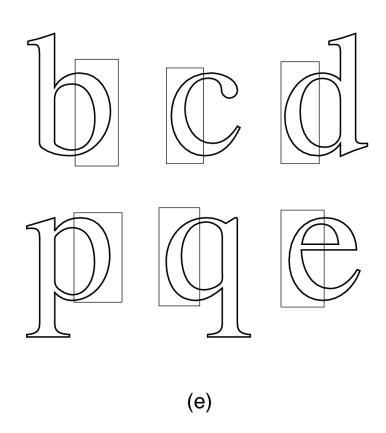


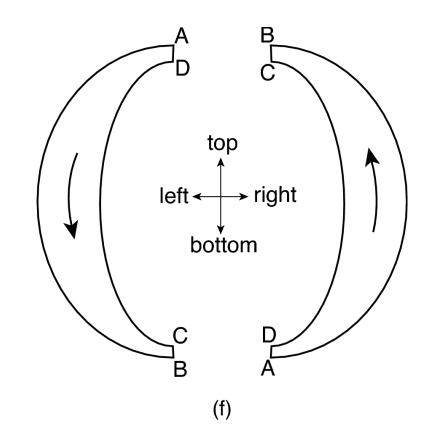


Source: PhD thesis of Changyuan Hu



The loop and half-loop components





Source: PhD thesis of Changyuan Hu



Parametric font variation

- Characters represented as a graph of components and their connections
- Parameter files
 - Local
 - single characters
 - Group
 - e.g. curve-to-stem junctions of "h, m, n, u" and "b, d, p, q"
 - Global
 - affect characters in the whole font, e.g. widths



Experiments with the Frutiger family: Medium

Original:

abcde abcdee abcde

Initial:

Improved:





Original:

abcde abcde

Initial:

Improved:

abcde





Original:

Initial:

abcde abcde Improved: abcode

FAKULTÄT FÜR !NFORMATIK



Weight variation via interpolation: Regular

Original:

abcde abcde

Initial:

Improved: abcce



Weight variation via interpolation: Extra black

Original:

Initial:

Partly corrected:

Corrected:

abcde bcde bcd



Variation of character width (condensed)

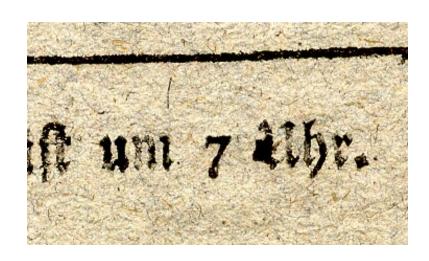
original: abcde

abcde

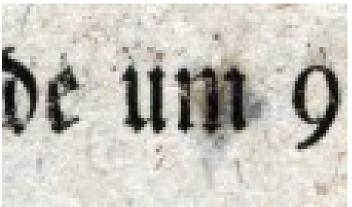
Synthesized:



Further application: OCR







unn BB

Source: Furrer and Volk, Reducing OCR Errors in Gothic-Script Documents, Workshop LTDHCH 2011



Thank you!

www.tamirhassan.com

Hassan, T., Hu, C. and Hersch, R.D.:

Next Generation Typeface Representations:

Revisiting Parametric Fonts,

DocEng 2010, Manchester, UK.