National University of Sciences and Technology (NUST)

SEECS

Digital Image Processing

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Run Length Smoothing Algorithm (RLSA)

RLSA

Run Length Smoothing Algorithm – RLSA

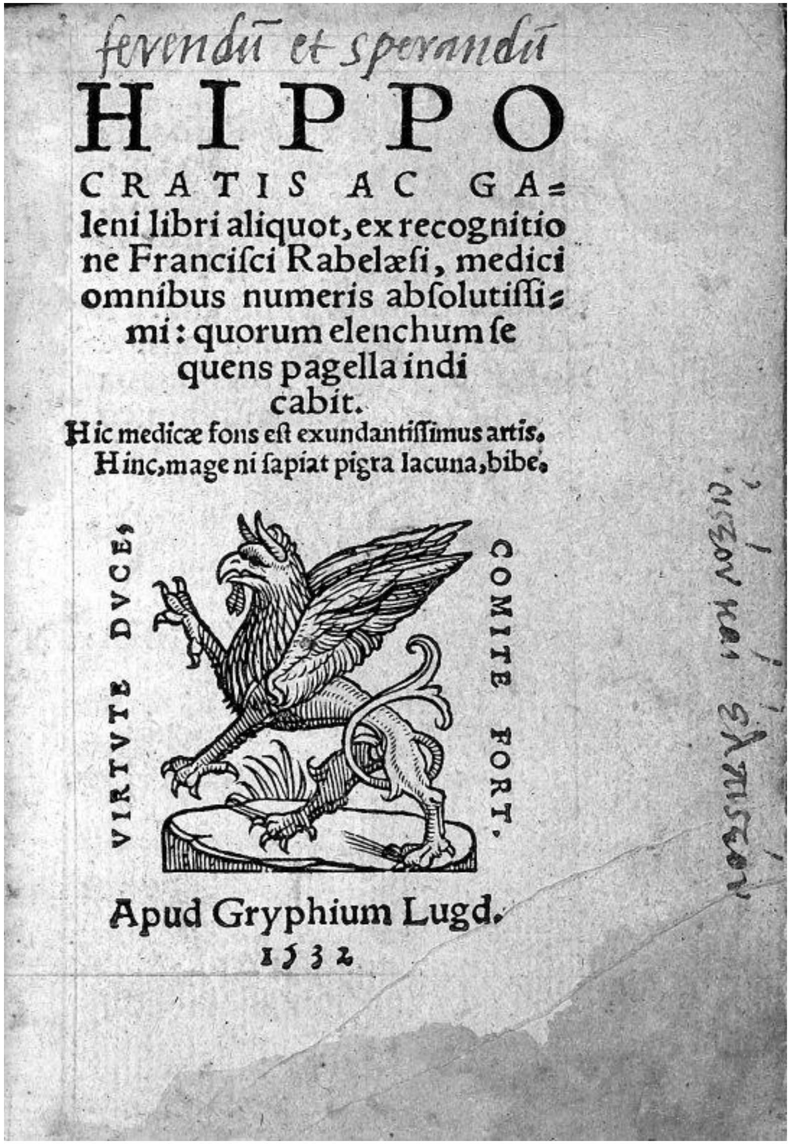
- Change runs of white pixels of length below a threshold to black
- Black pixels remain unchanged

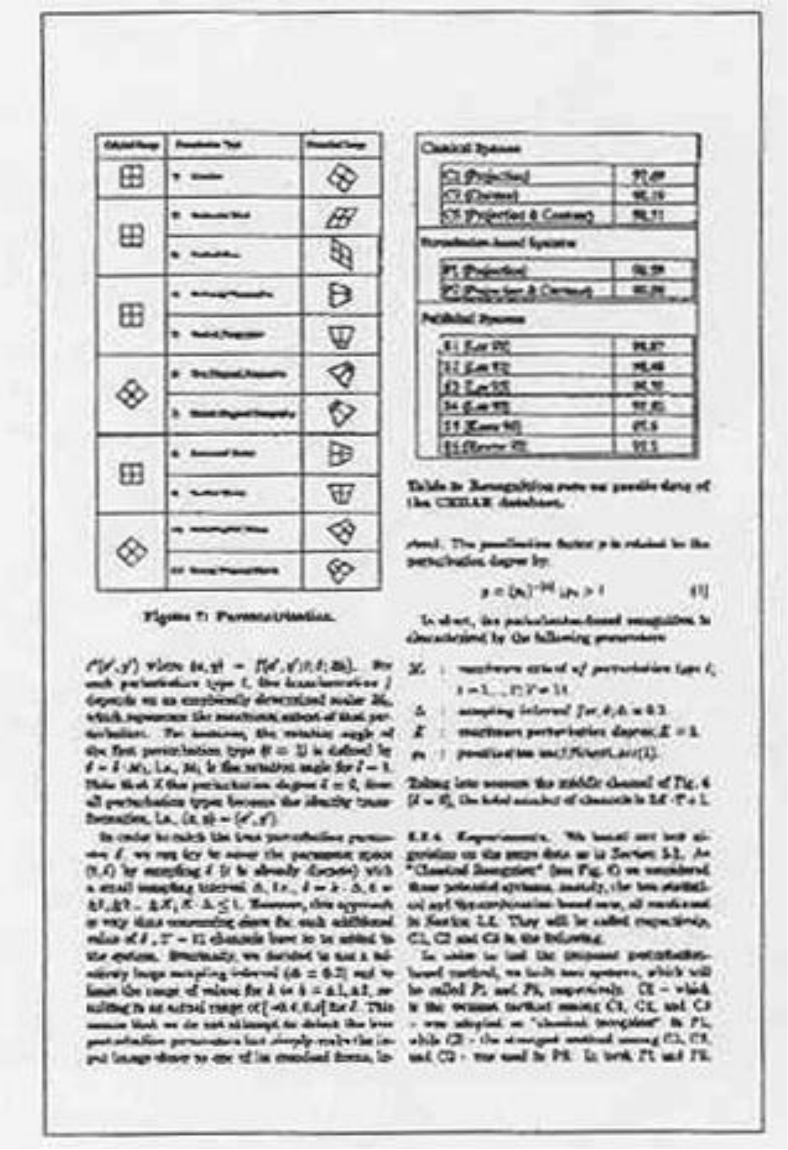
- Example: *C*=4

X= 0 0 0 1 1 1 0 0 1 1 1 1 1 0 0 0 1 1 1 0

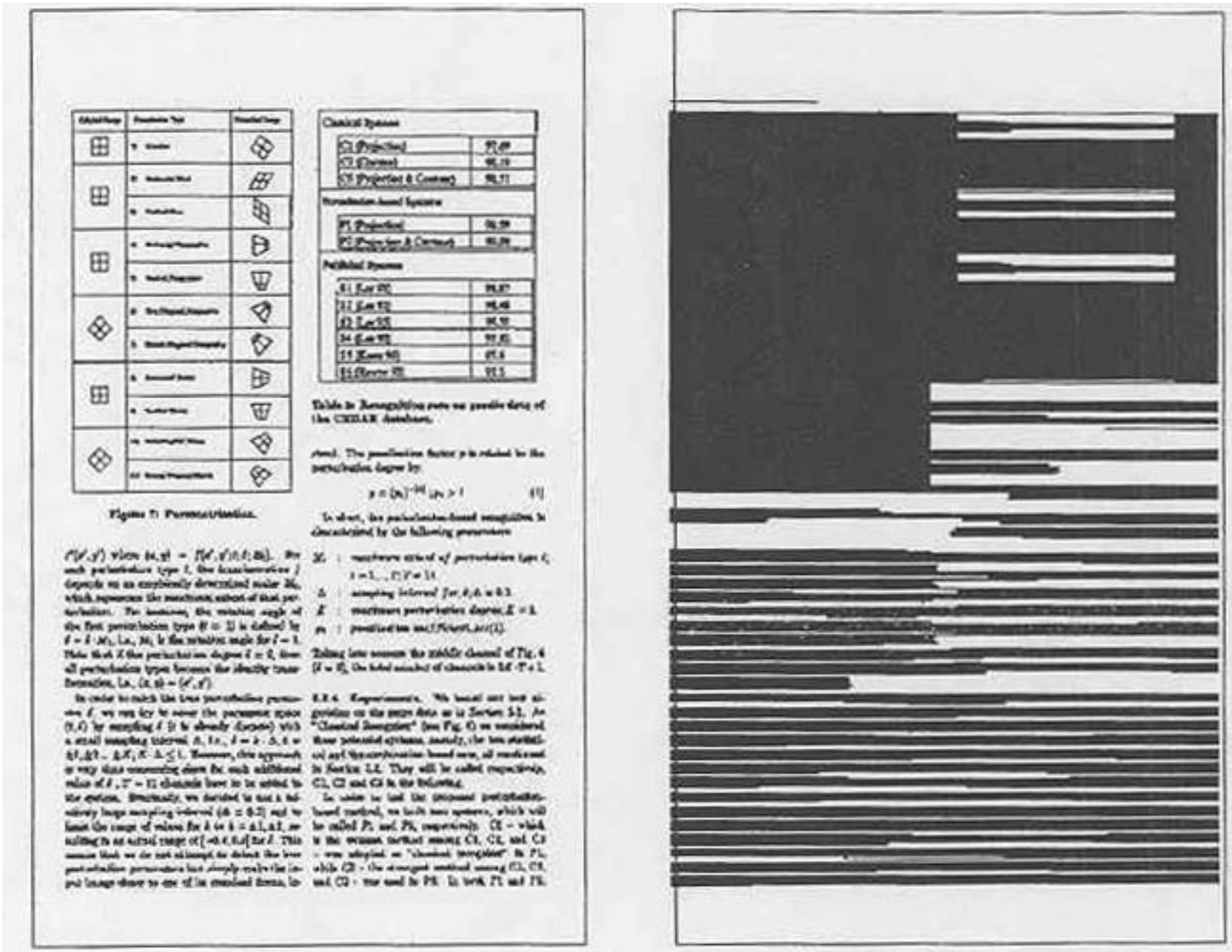
Y= 0 0 0 **0 0 0** 0 0 1 1 1 1 1 0 0 0 **0 0 0** 0

RLSA


ferendū et sperandū
HIPPO
CRATIS AC GA-
leni libri aliquot, ex recognitio
ne Francisci Rabelæsi, medici
omnibus numeris absolutissi-
mi: quorum elenchum se
quens pagella indi
cabit.
Hic medicæ fons est exundantissimus artis.
Hinc, mage ni sapiat pigra lacuna, bibe.
VIRTVTE DVCE, COMITE FORT.
Apud Gryphium Lugd.
1532

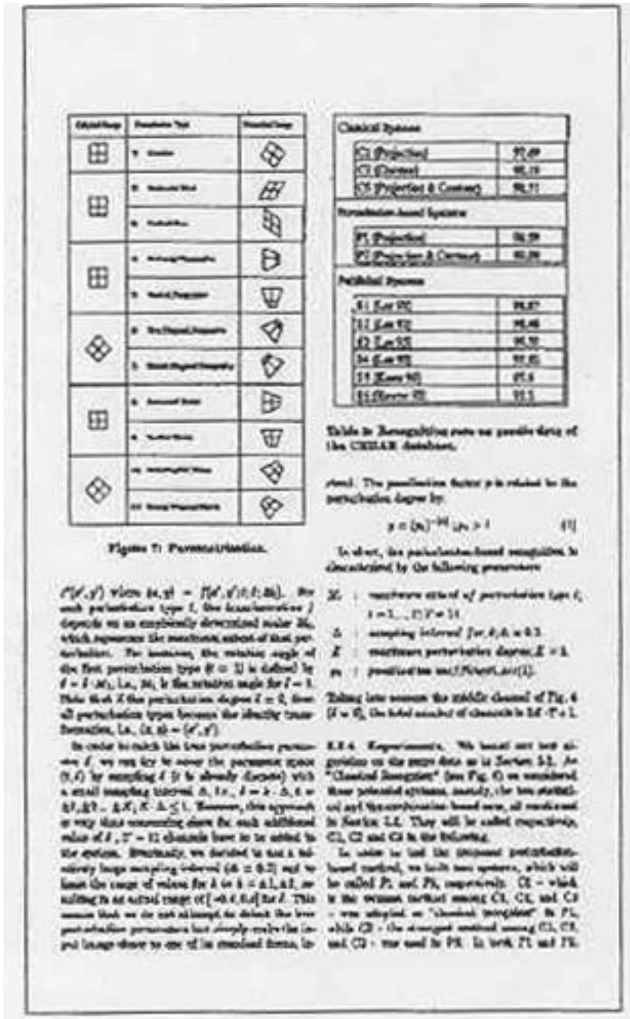


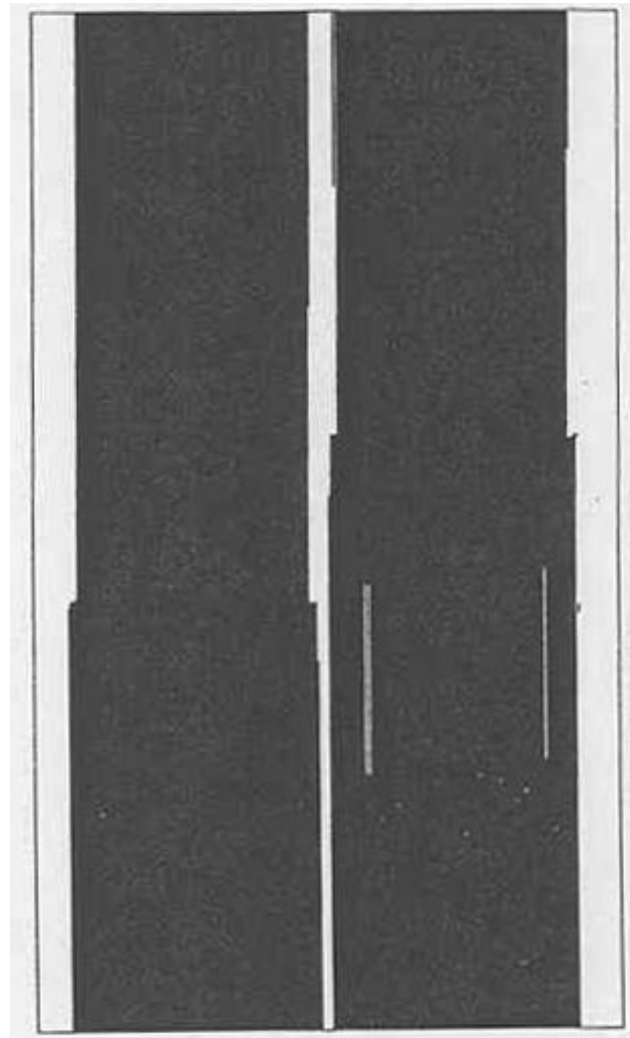
RLSA



Horizontal RLSA

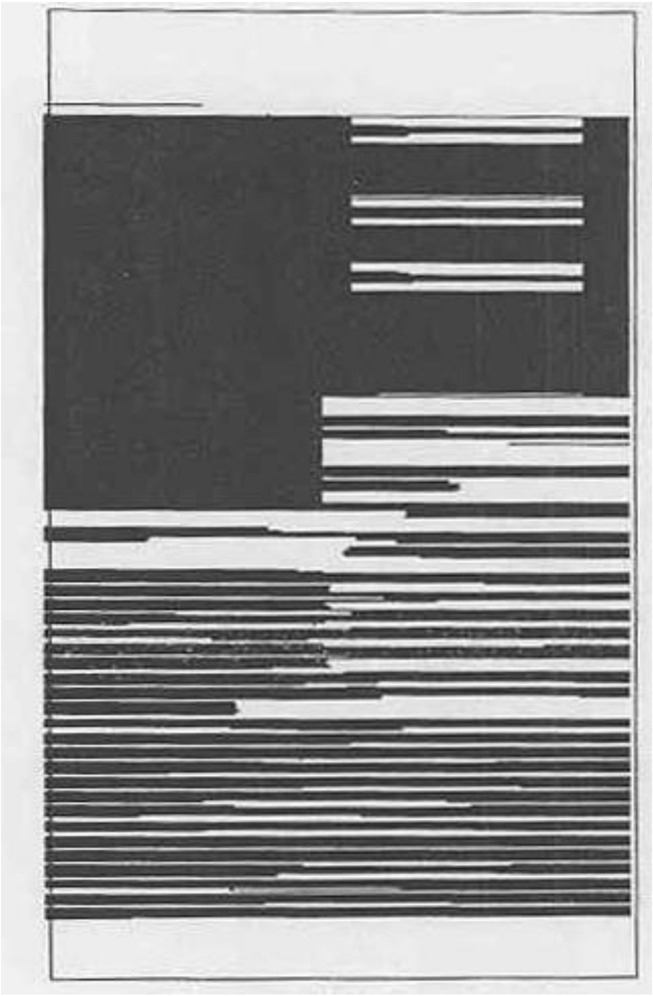
RLSA



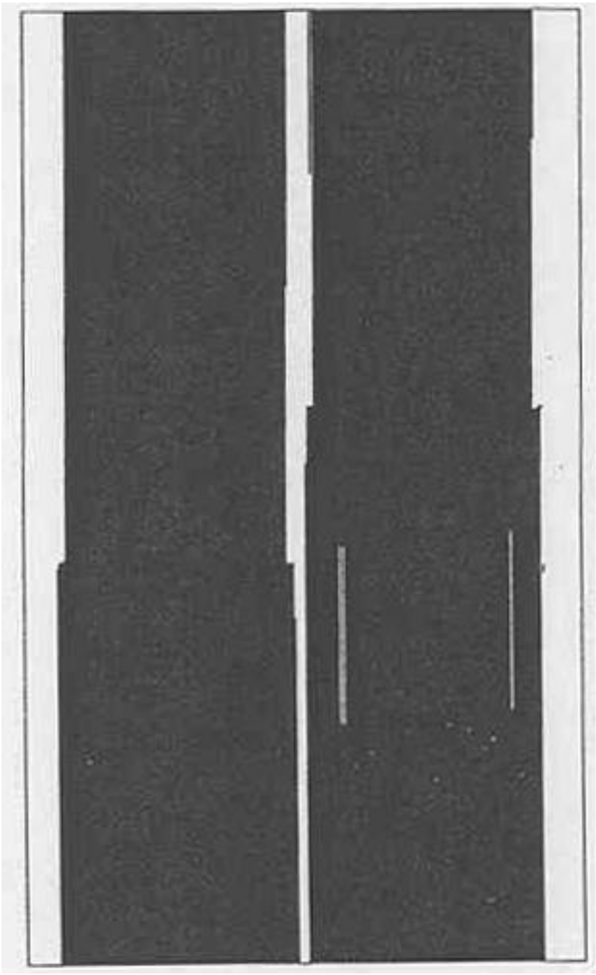


Vertical RLSA

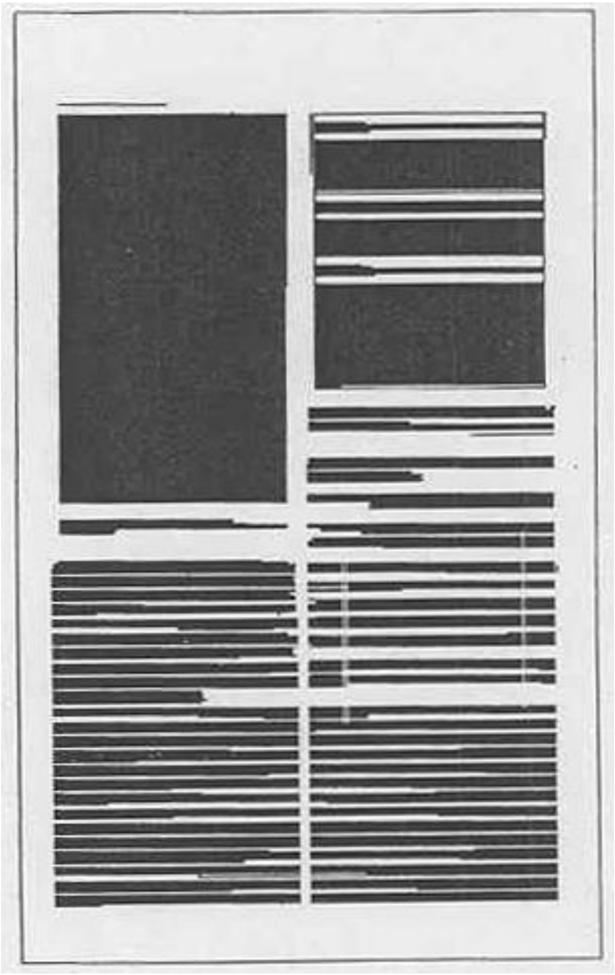
RLSA



Horizontal RLSA



Vertical RLSA



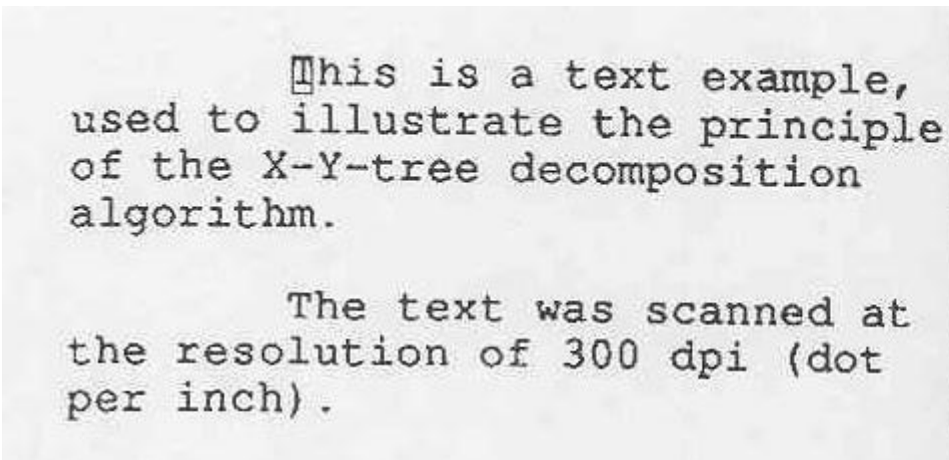
Combined

Line Extraction?

This is a text example, used to illustrate the principle of the X-Y-tree decomposition algorithm.

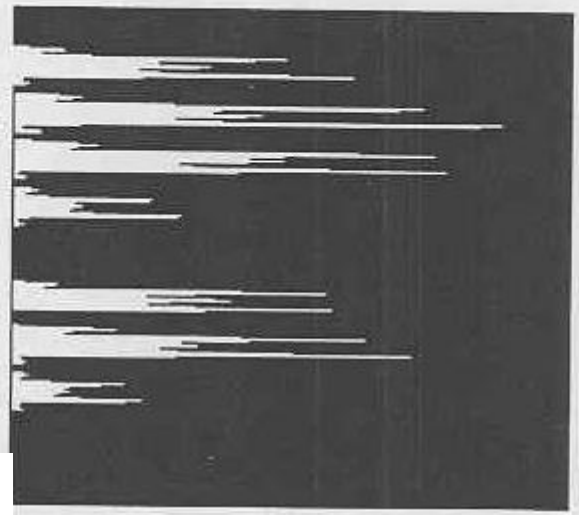
The text was scanned at the resolution of 300 dpi (dot per inch).

Line Extraction?



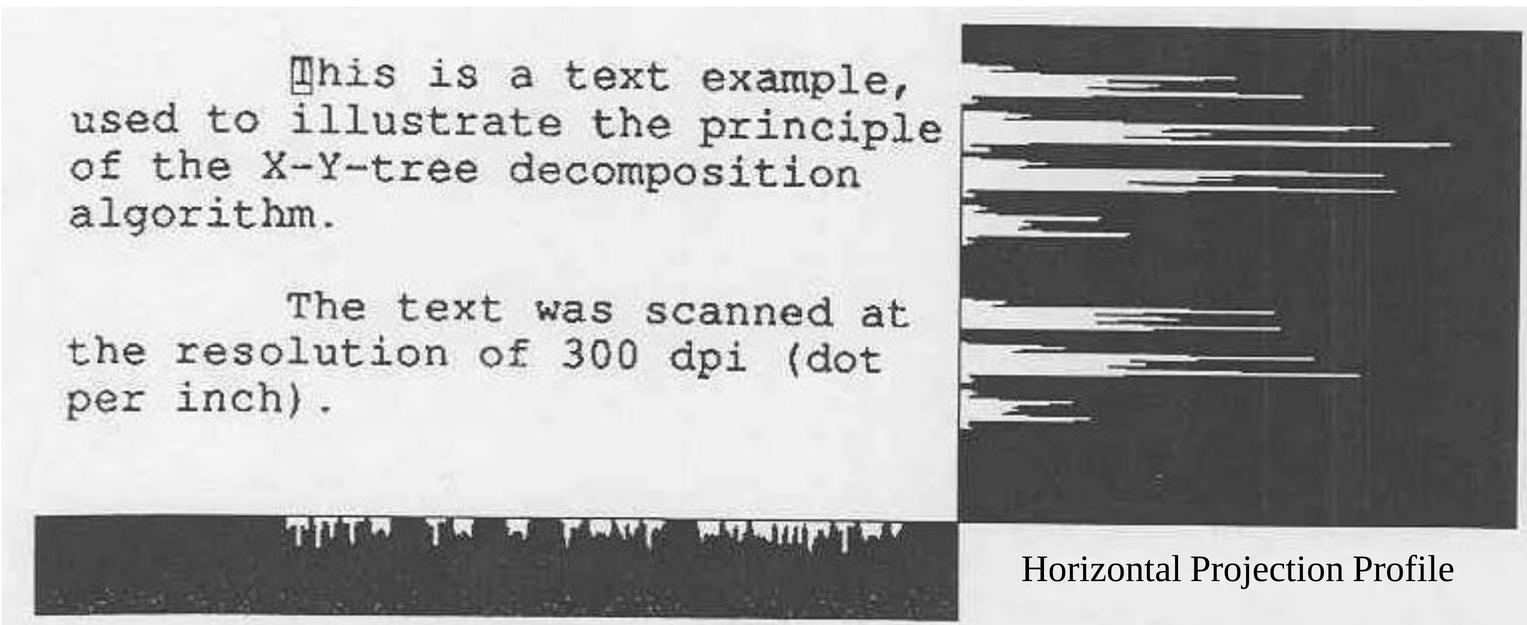
This is a text example, used to illustrate the principle of the X-Y-tree decomposition algorithm.

The text was scanned at the resolution of 300 dpi (dot per inch).



Horizontal Projection Profile

Projection Profiles

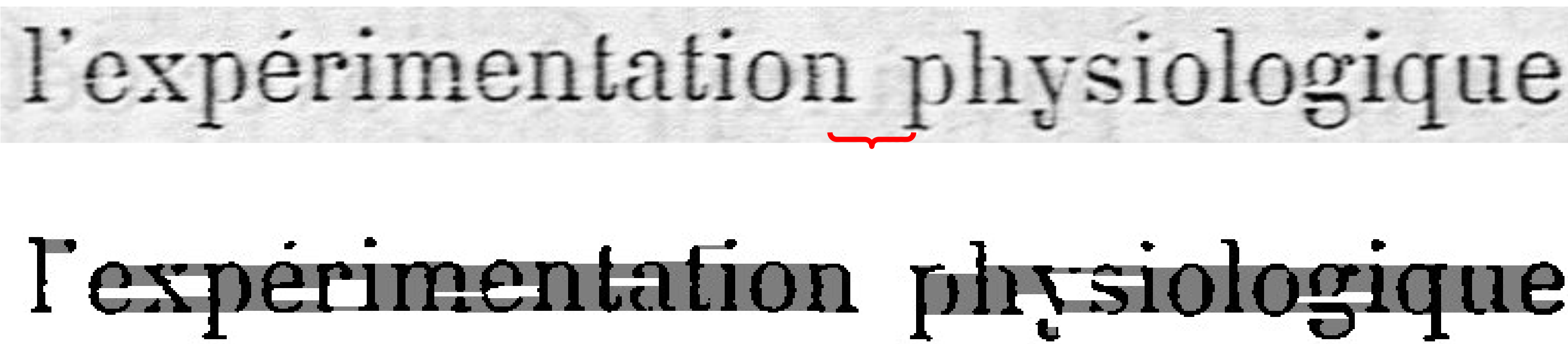


Horizontal Projection Profile

Vertical Projection Profile of first line

RLSA

Word Extraction using RLSA



End

RLSA