

Automatic Text Localisation in Scanned Comic Books

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Presentation

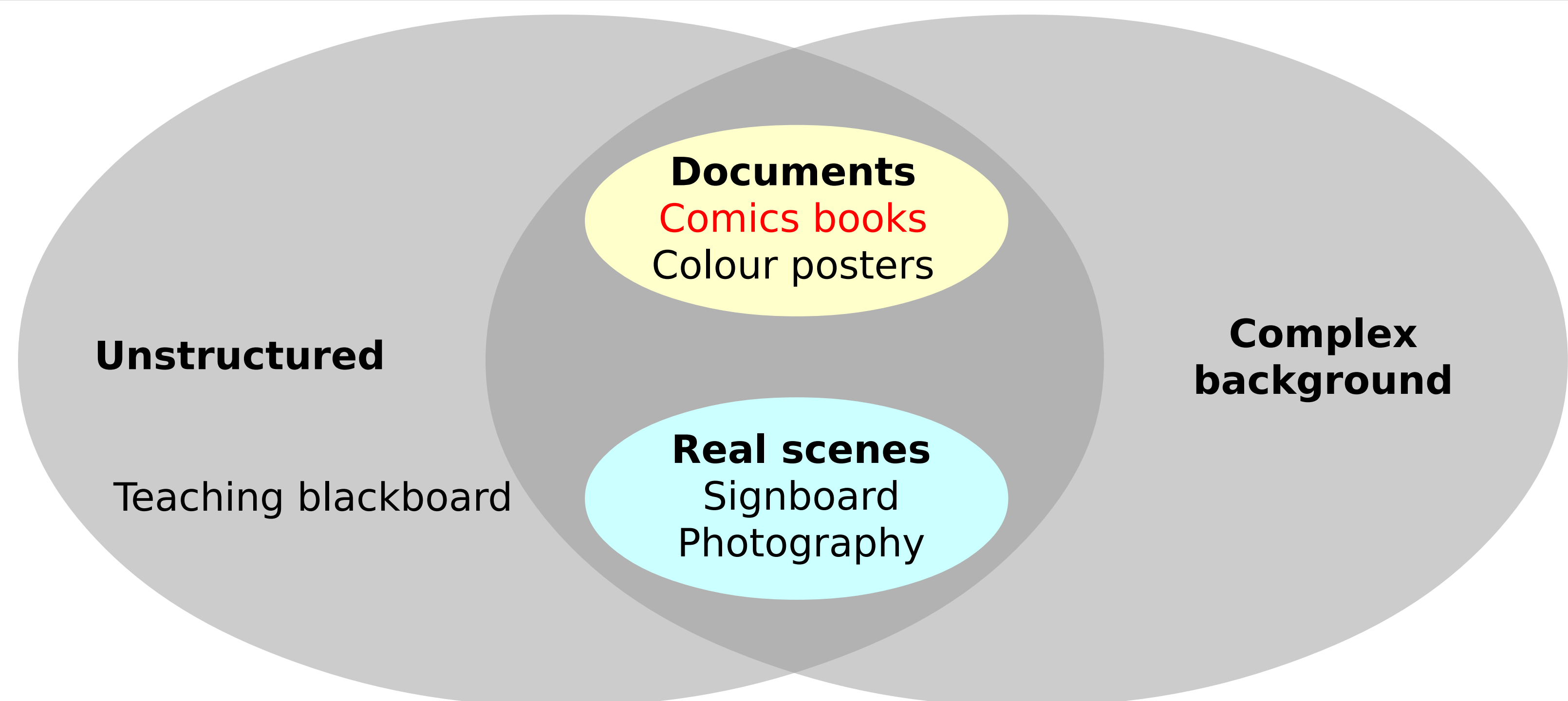
Keywords

Comic content understanding

Text / graphic separation

Text lines localisation

Benchmark dataset



Experiments

Dataset

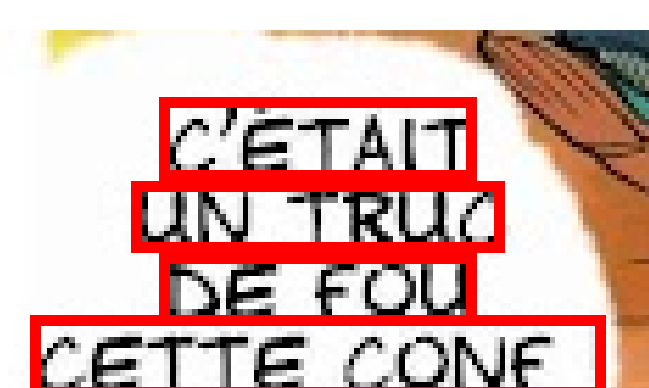
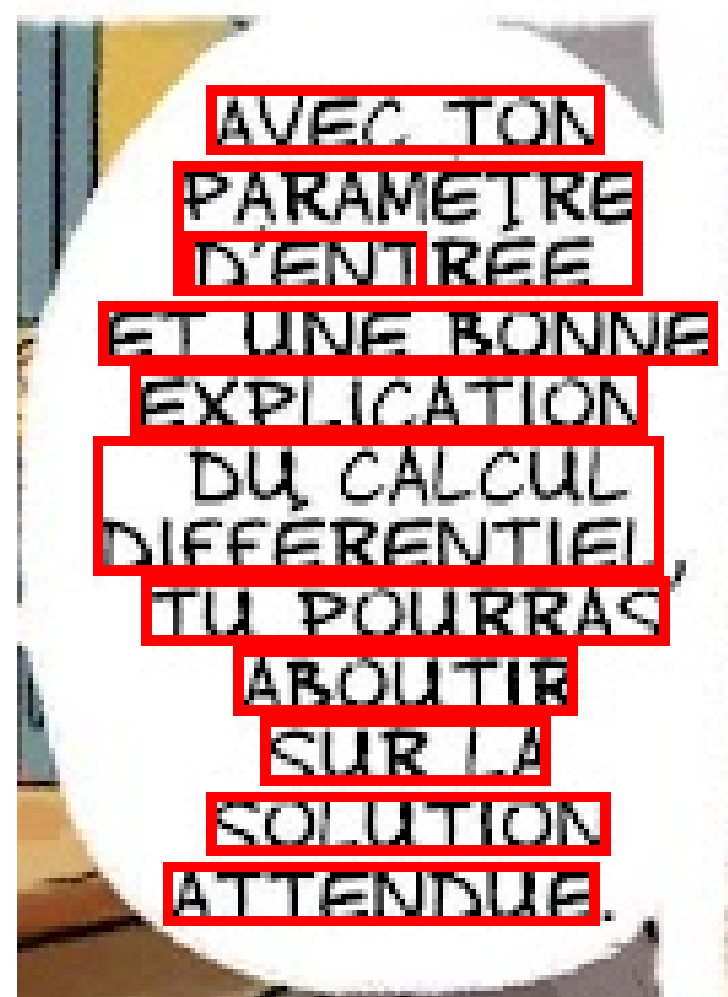
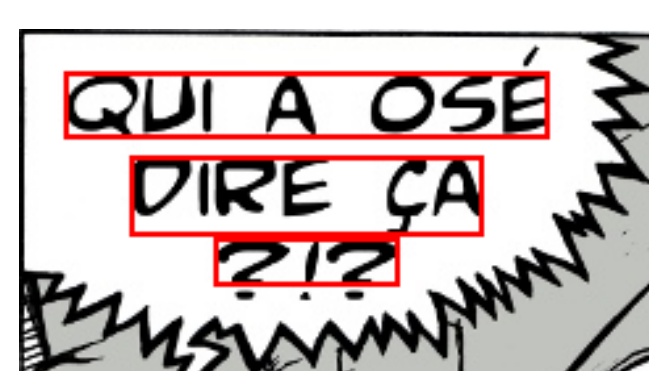
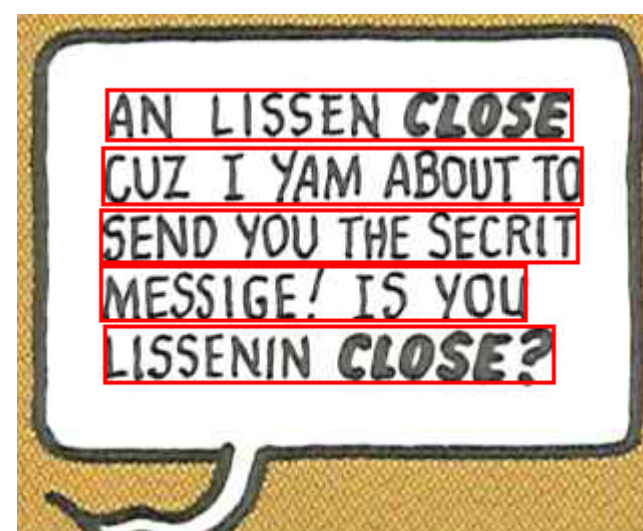
image 1 recall 79.26% precision 84.82% fmean 79.73%	image 2 recall 69.23% precision 73.61% fmean 71.42%	image 3 recall 69.23% precision 80.81% fmean 75.02%	image 4 recall 66.67% precision 61.2% fmean 63.9%	image 5 recall 64.1% precision 64.71% fmean 73.1%
image 6 recall 66.11% precision 80.54% fmean 73.3%	image 7 recall 66.43% precision 83.78% fmean 75.06%	image 8 recall 66.11% precision 74.14% fmean 70.15%	image 9 recall 66.67% precision 66.67% fmean 66.67%	image 10 recall 59.23% precision 76.7% fmean 67.96%
image 11 recall 80.46% precision 87.97% fmean 84.21%	image 12 recall 66.43% precision 83.78% fmean 75.06%	image 13 recall 100% precision 82.35% fmean 90.32%	image 14 recall 81.3% precision 85.45% fmean 83.37%	image 15 recall 66.67% precision 66.67% fmean 66.67%
image 16 recall 79.23% precision 89.26% fmean 84.24%	image 17 recall 67.4% precision 76.47% fmean 71.93%	image 18 recall 66.67% precision 82.26% fmean 74.47%	image 19 recall 75.13% precision 89.85% fmean 82.5%	image 20 recall 77.24% precision 75.83% fmean 76.53%

eBDtheque [1]

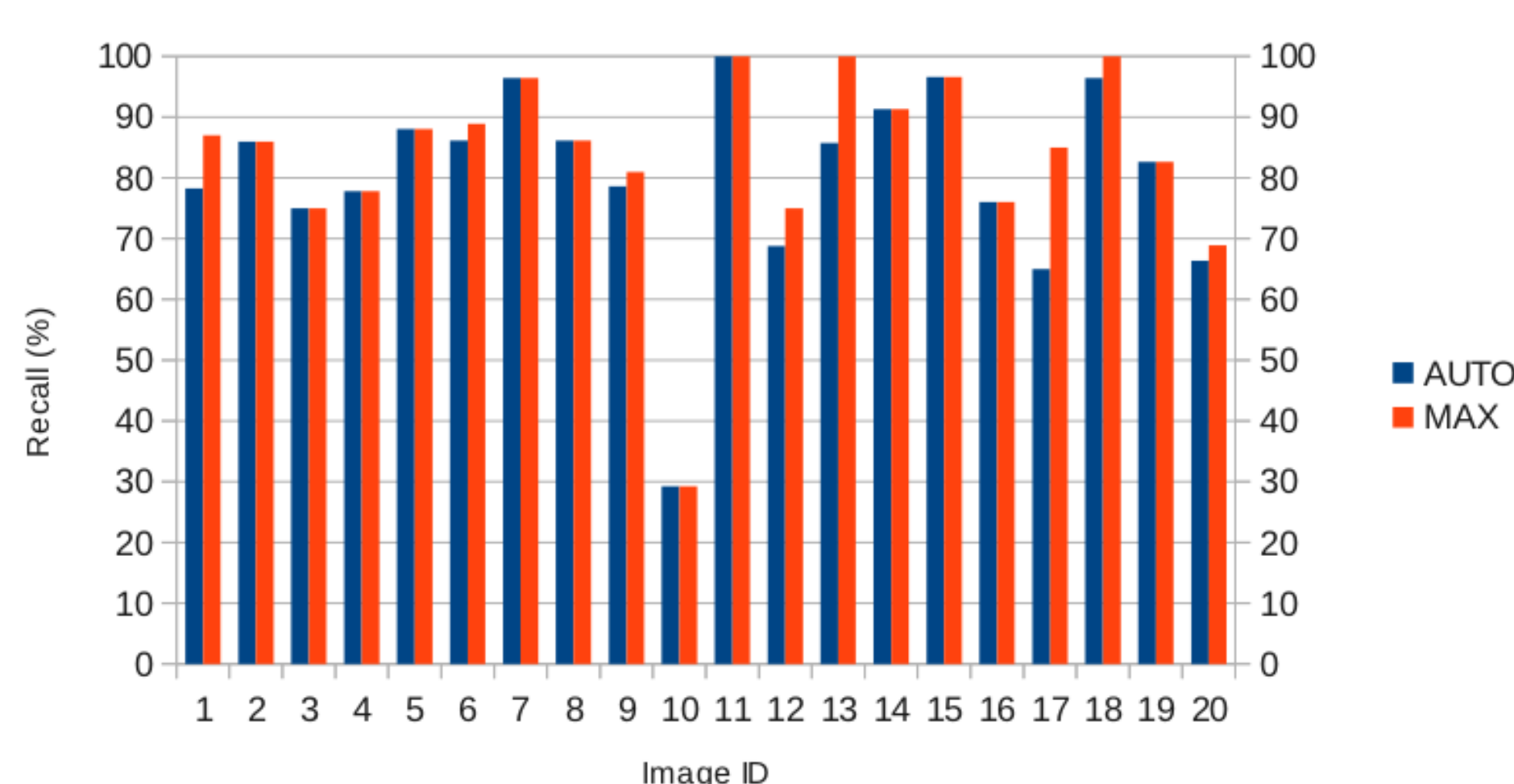
- 1700 text lines
- 100 to 300 DPI
- Text line level

Results

ET PUIS LEUR CERVEAU, COMME LEURS YEUX
SONT ENCORE IMMATURES. ILS N'ENREGISTRENT
PAS GRAND CHOSE...



Evaluation



Contributions

Minimum Connected Component Thresholding (MCCT)

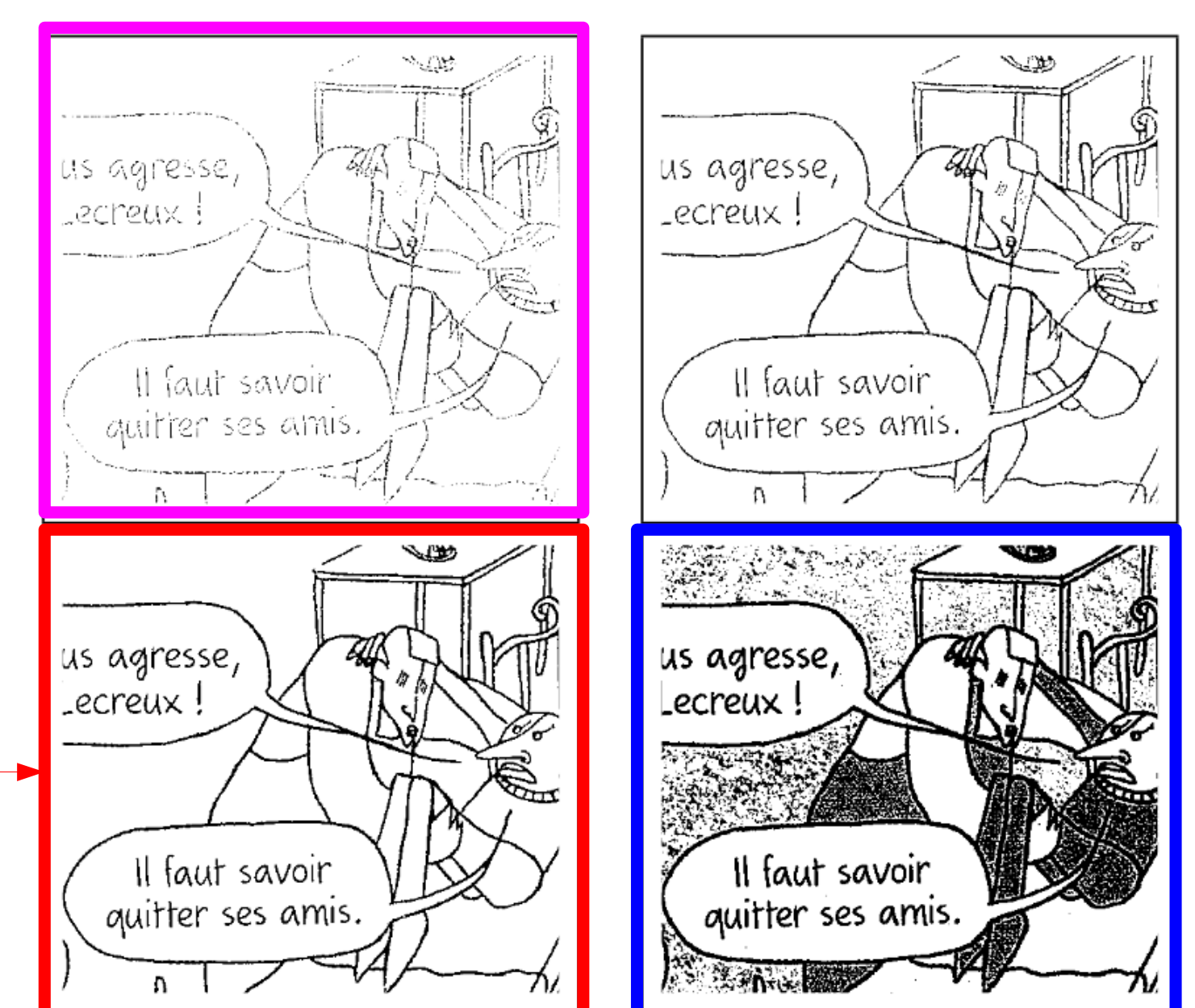
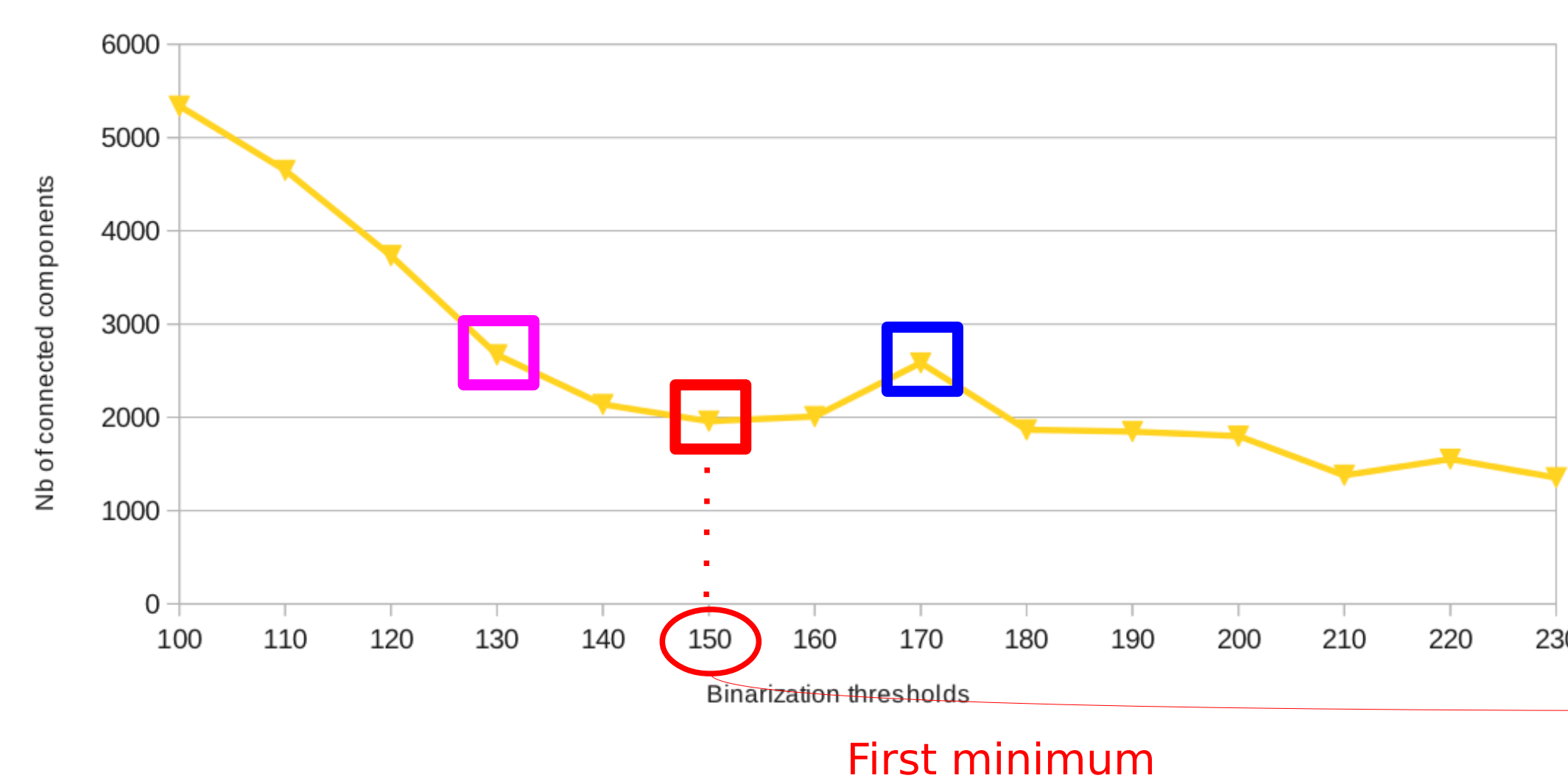
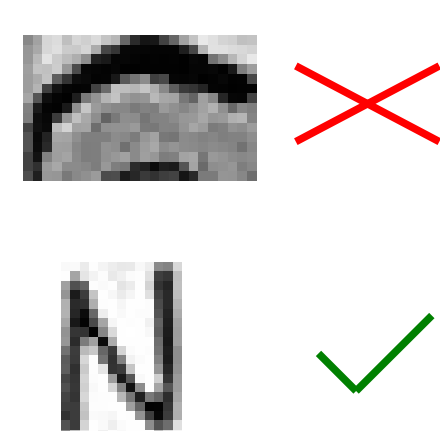


Image credit [4]

Text / graphic separation

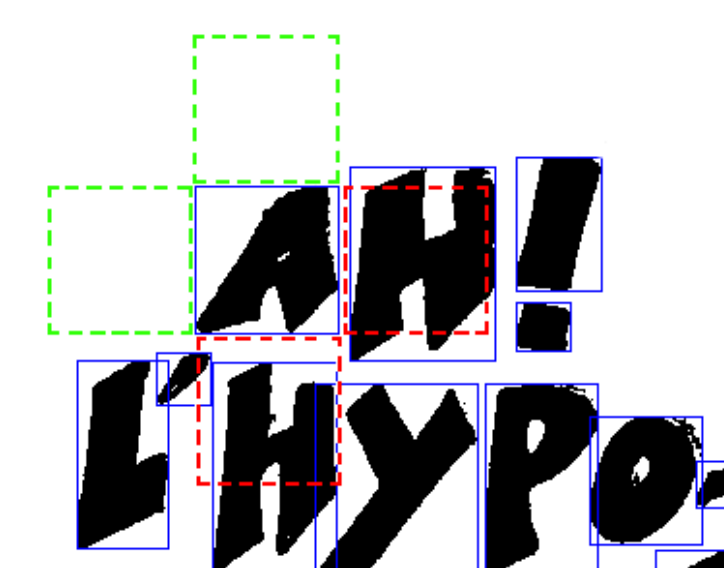
Contrast



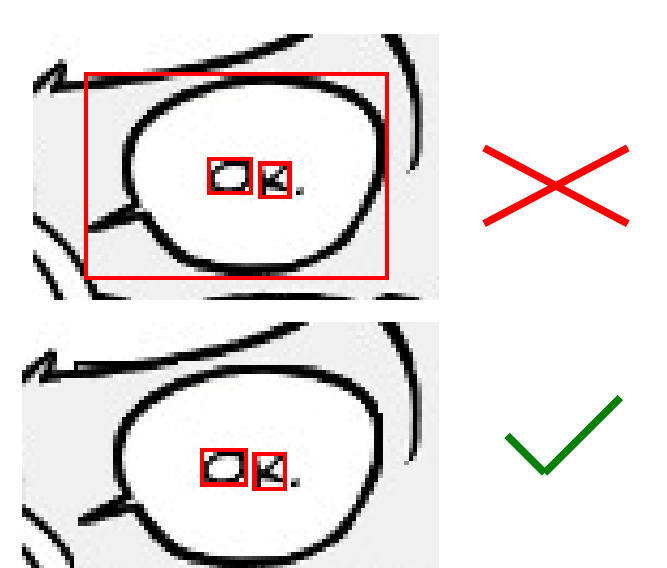
Black on white



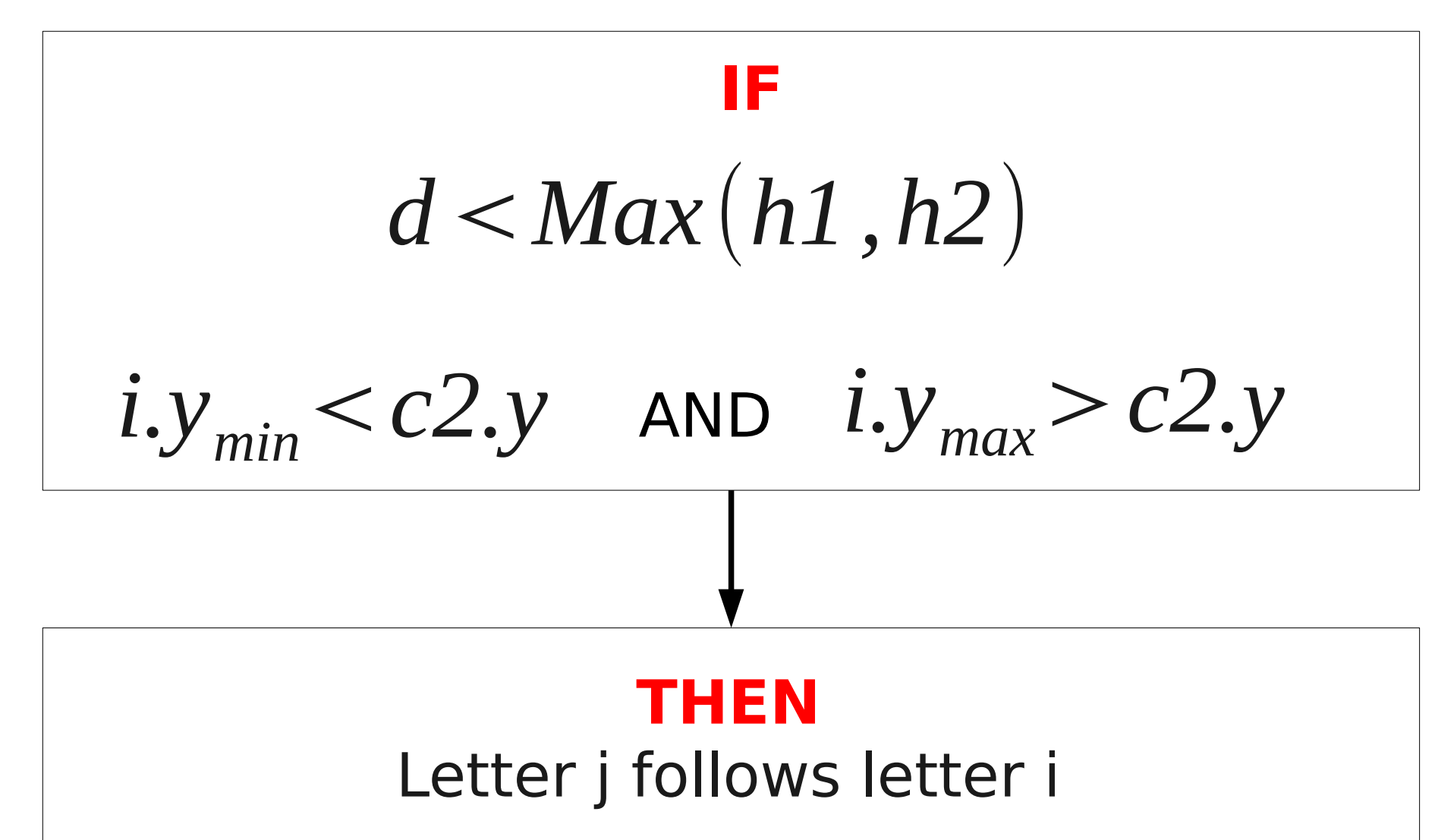
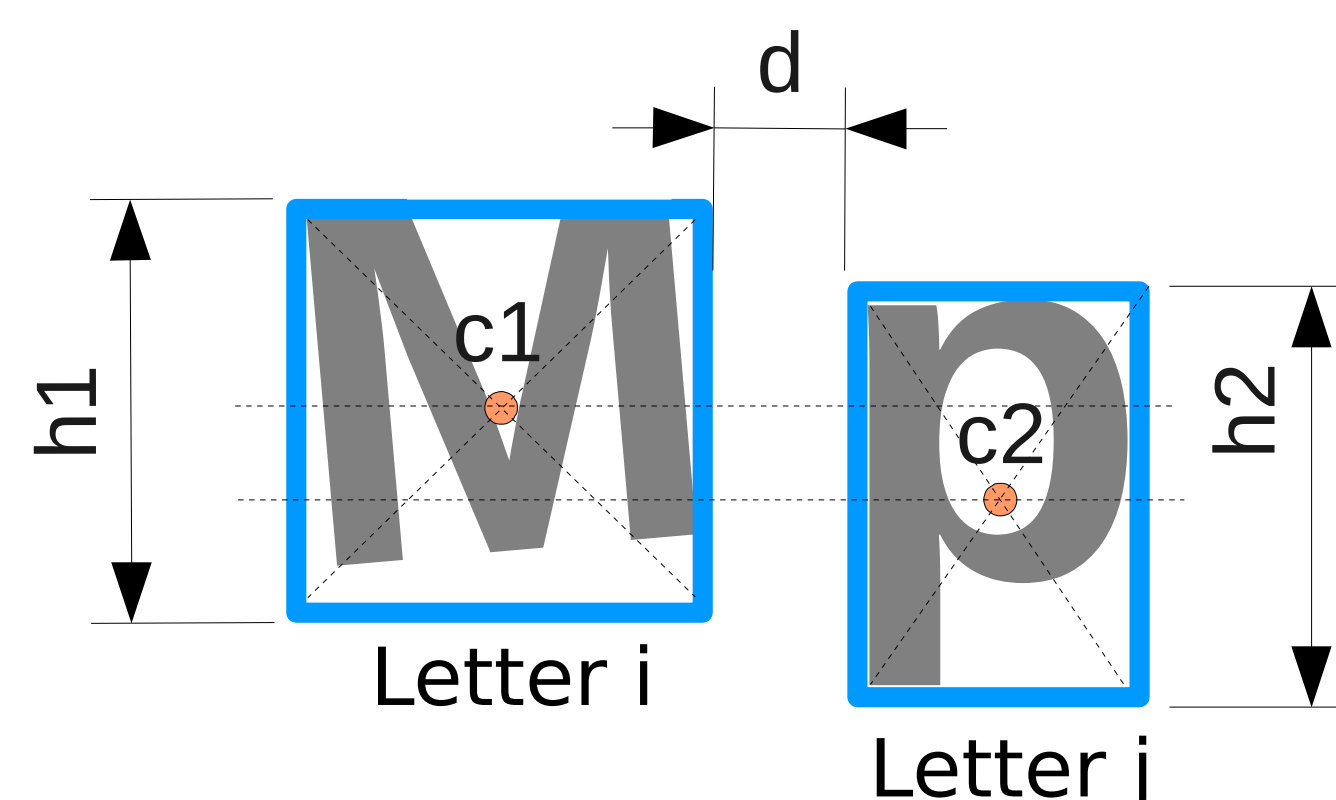
Neighbourhood



Overlapping



Text line localisation



Applications

Localization

Image compression
OCR training
Retargeting & reflowing

Localization + OCR

Automatic translation
Speech synthesis

Conclusion & Perspectives

Comics are specific drawing
Consider other type of text
What about speech balloon?

References

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- [2] Neumann, L. and Matas, J. Real-time scene text localization and recognition. *Computer Vision and Pattern Recognition (CVPR)*, pages 1485–1490. 2012
- [3] Tombre, K., Tabbone, S., Plissier, L., Lamiroy, B., and Dosch, P. Text/graphics separation revisited. In *Workshop on Document Analysis Systems (DAS)*, pages 200–211. Springer-Verlag. 2002
- [4] Roudier, N. Les terres creusees, Acte sur BD. Actes Sud. 2011



Segment.	Text/graphic sepa.	R (%)	P (%)
(Neumann and Matas, 2012)[2]		12.56	30.19
Colour	Proposed	15.69	6.92
Proposed	(Tombre et al., 2002)[3]	74.18	61.25
Otsu	Proposed	75.14	64.14
Proposed	Proposed	75.82	76.15