



Speech balloon contour classification in comics

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Summary

- Project
 - Presentation
- Speech balloons
 - Shape/contour differences
 - _ Same image, color class, comboBox list
 - Paper/presentation dif. (time serie, suggested contour)
- Detection
- Classification
- Evaluation
 - Dataset
- Conclusion
 - Contributions
 - _ Shape and contour differences
 - _ Contour detection and interpretation

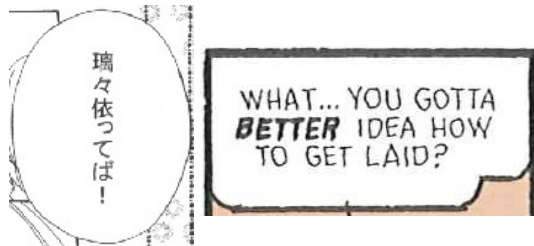
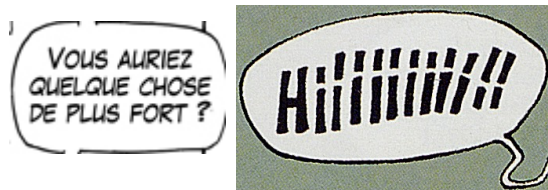
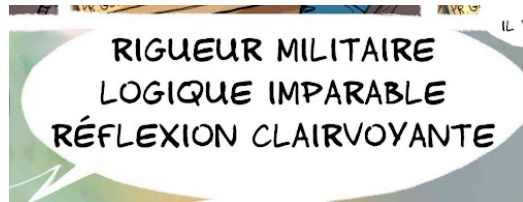
Project

L3i project: eBDtheque

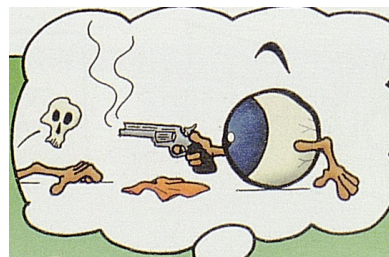
- June 2011 – September 2014
- 2 doctoral researchers, 5 assistant professors, 3 professors
- Comic books
 - Cultural heritage
 - Need to be valorized by the new technologies
- Objective: comics content understanding
 - Augmented reading experience
 - Information retrieval (e.g. semantic query, full text search)
 - New dataset <http://ebdtheque.univ-lr.fr>
- Progress
 - Panels, text lines, balloons, people

Speech balloons

Where is the semantic information? What can we infer?



Smooth contour:
dialogue, conversation...



Wavy contour:
Thought, dream, insinuation...

Image credits: eBDtheque dataset



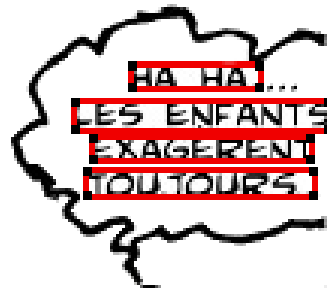
Zigzag contour:
exclamation, event, action...

Detection

An active contour model for speech balloon detection in comics

Christophe Rigaud, Dimosthenis Karatzas, Joost van de Weijer, Jean-Christophe Burie, & Jean-Marc Ogier.
In 12th International Conference on Document Analysis and Recognition (ICDAR), 2013

Initialization



Detection

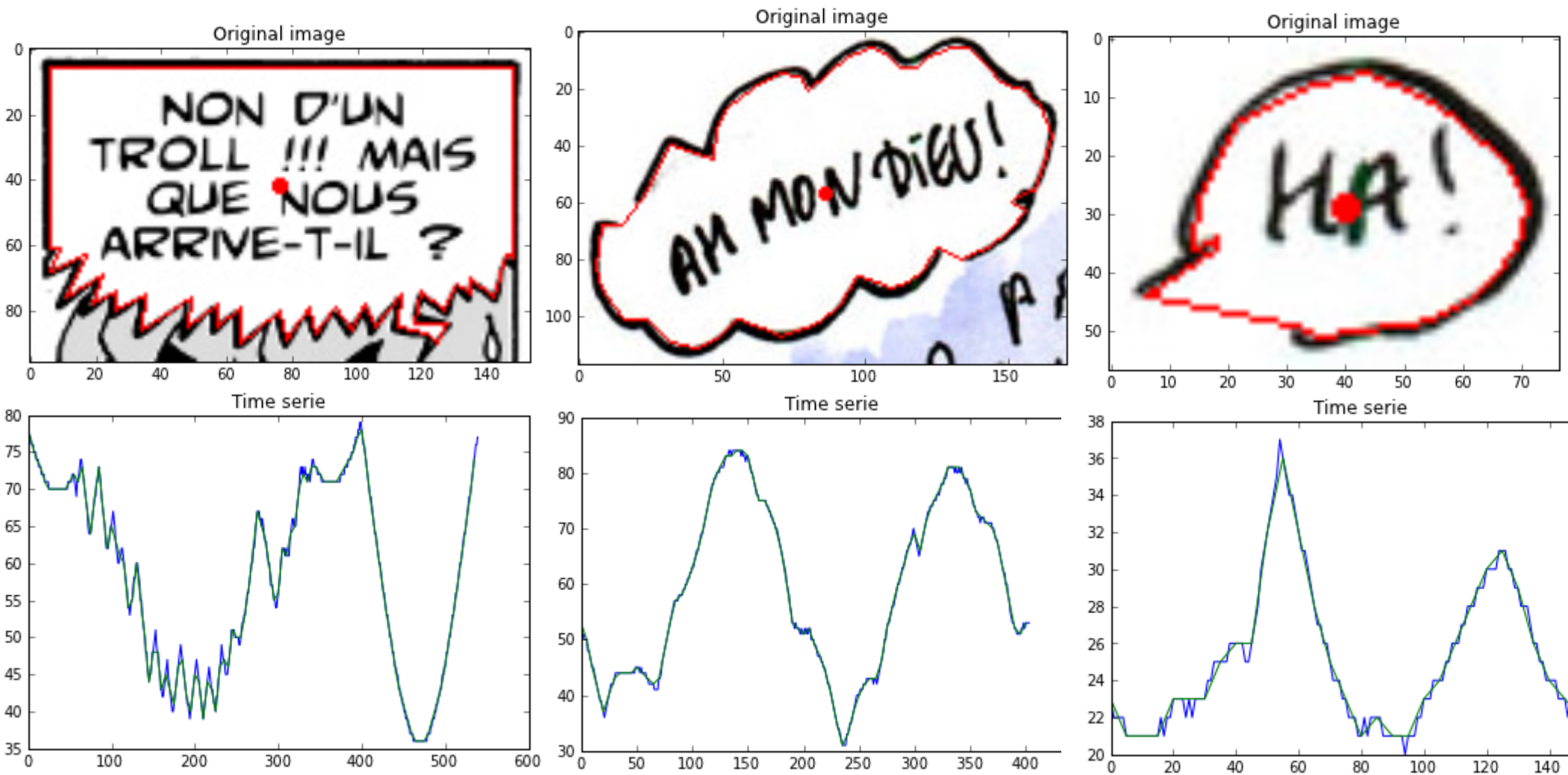
$$\min(E) = \min(E_{\text{internal}} + E_{\text{external}} + E_{\text{text}})$$

Results



Classification

OLD Metrics: convexity defect, depth, aperture and total hull perimeter percentage



Evaluation

- eBDtheque subset
 - 20 balloons
 - Pixel level ground truth
 - {smooth, zigzag, wavy}
 - Tail direction
- ADD TABLE HERE

Conclusion

- Contours are more discriminant than shape
-
- Tail direction