Lehigh University, Bethlehem, PA, USA - August 21 2013

GREC 2013

Speech balloon contour classification in comics

Christophe Rigaud
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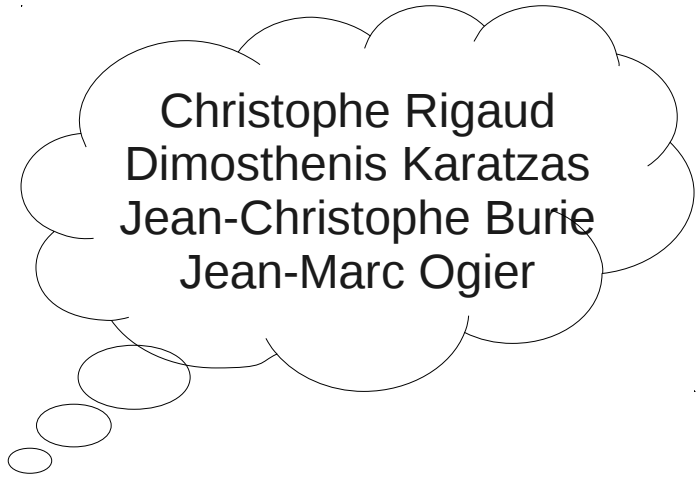

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Centre de Visió per Computador

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

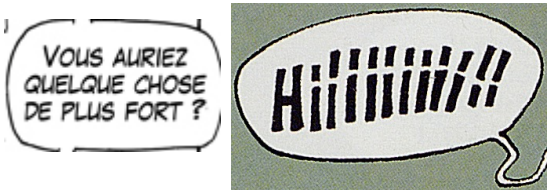
Project

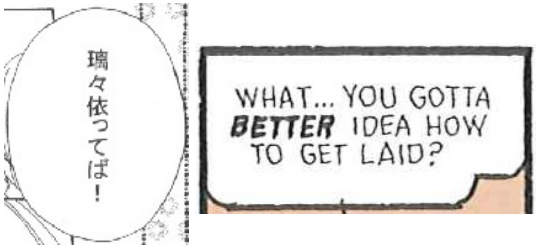
L3i project: eBDtheque

- 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

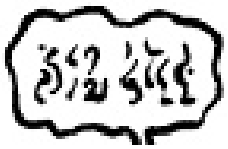
Speech balloons

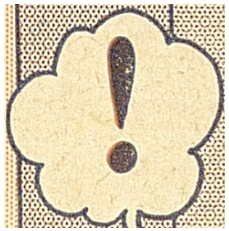
Where is the semantic information? What can we infer?

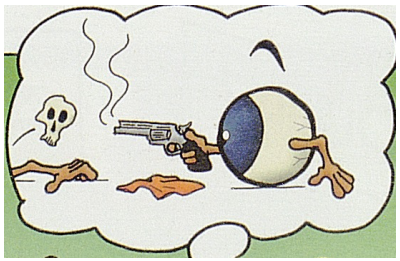




Smooth contour:
dialogue, conversation...







Wavy contour:
Thought, dream, insinuation...

Zigzag contour:
exclamation, event, action...

Image credits: eBDtheque dataset

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

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

Results

Classification

Evaluation

- eBDtheque subset
  - N balloons
  - Location
  - Contour type
  - Tail direction

Conclusion