Détection et association des queues de bulles : cas des multi-bulles

Christophe Rigaud, Jean-Christophe Burie et Samuel Petit

D'ici, on voit + loin !

SOMMAIRE

Le laboratoire commun

Un programme conjoint d'innovation autour des problématiques liées à l'exploitation et la valorisation de la BD numérique, depuis 2017.

INTRODUCTION

Objectif : détecter, associer et auto-évaluer la queue des multi-bulles

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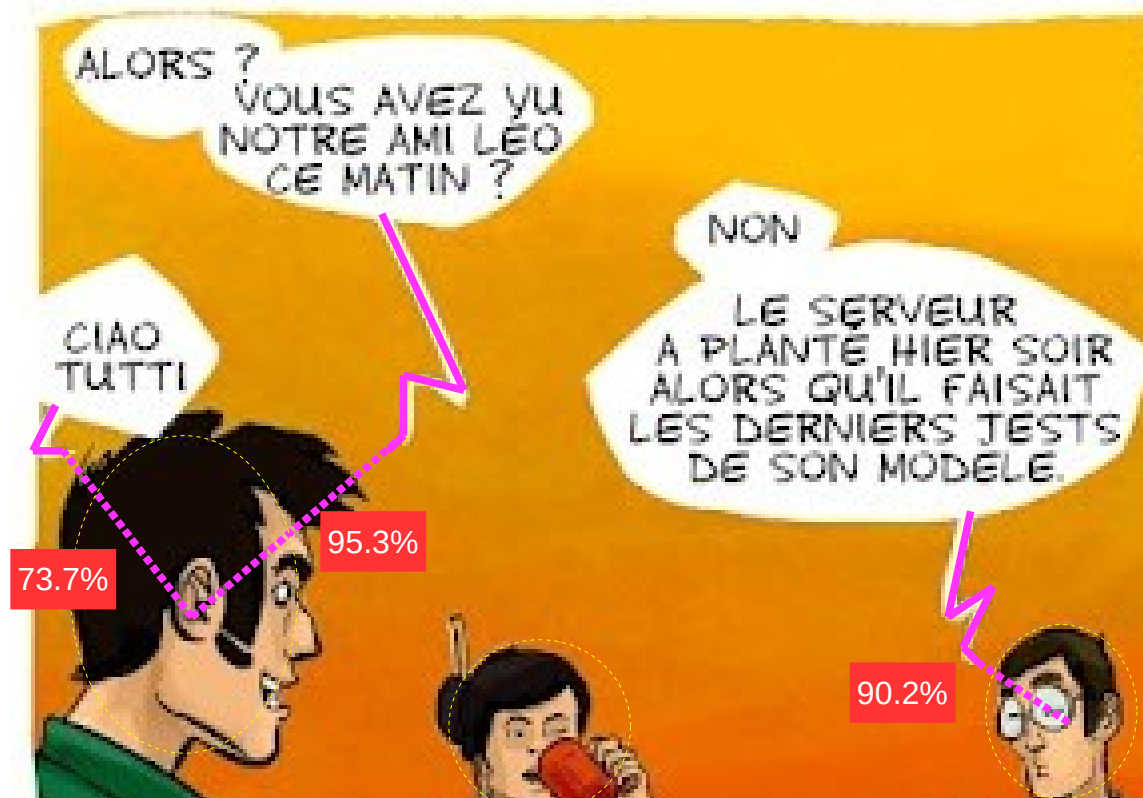

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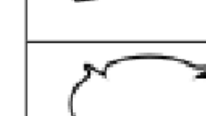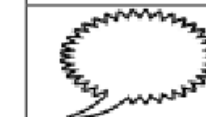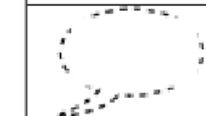## Détection et association des queues de bulles

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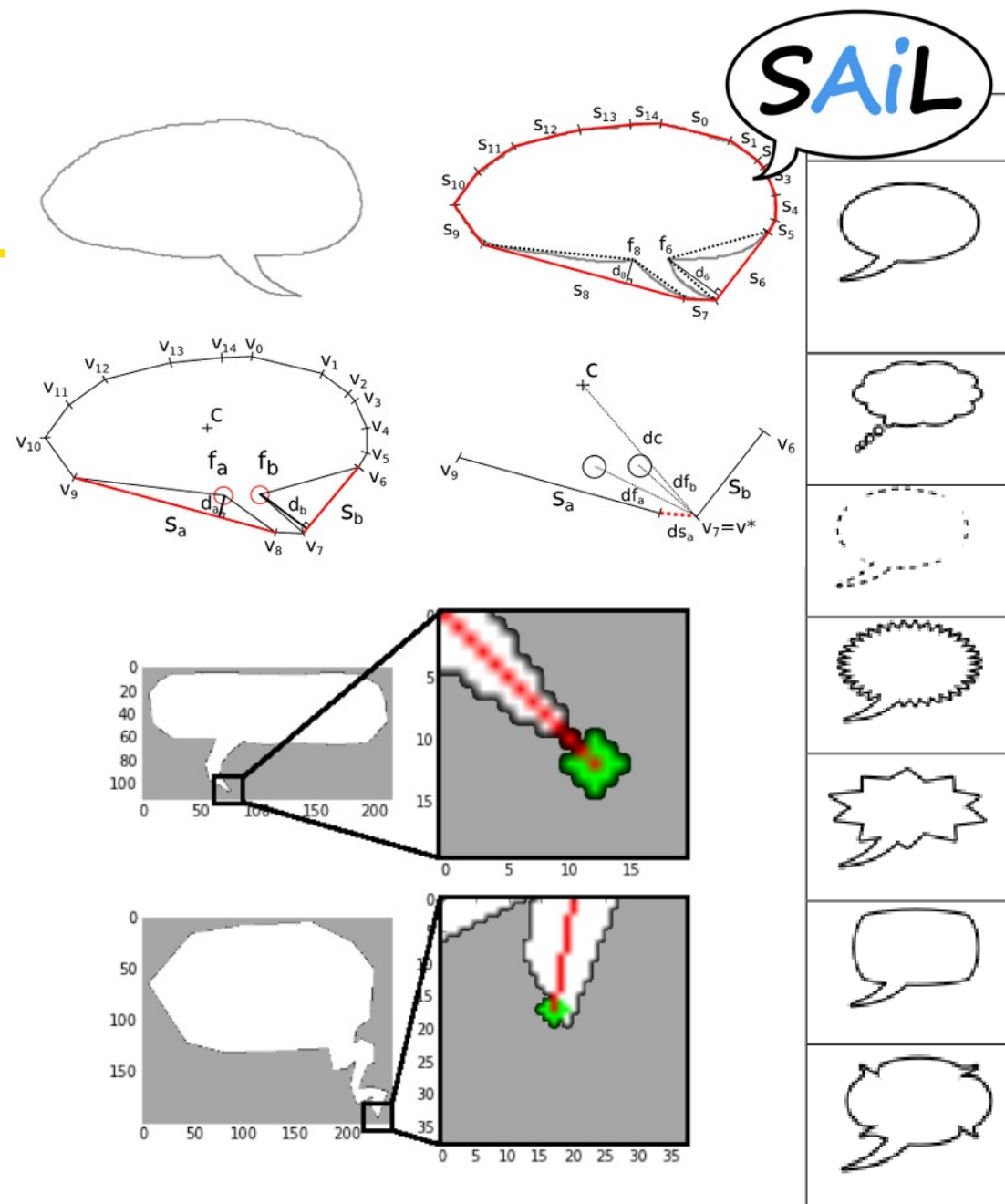## Détection et association des queues de bulles

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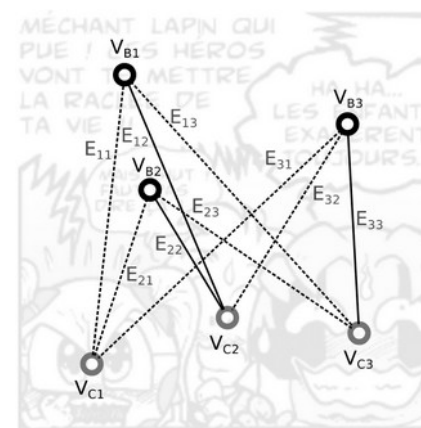## Détection et association des queues de bulles

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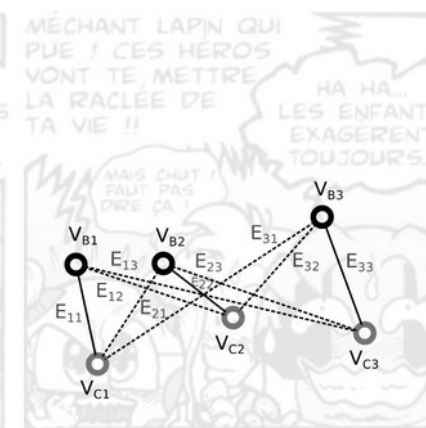
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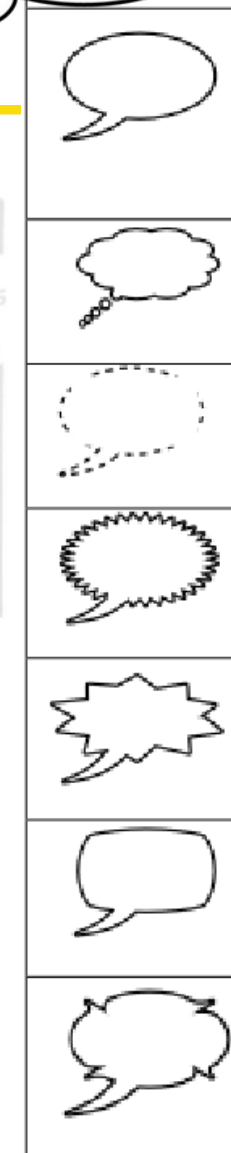
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(a) Anchor points of level 2   (b) Anchor points of level 3

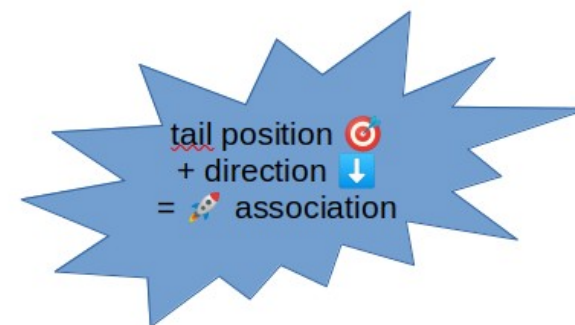## Détection et association des queues de bulles

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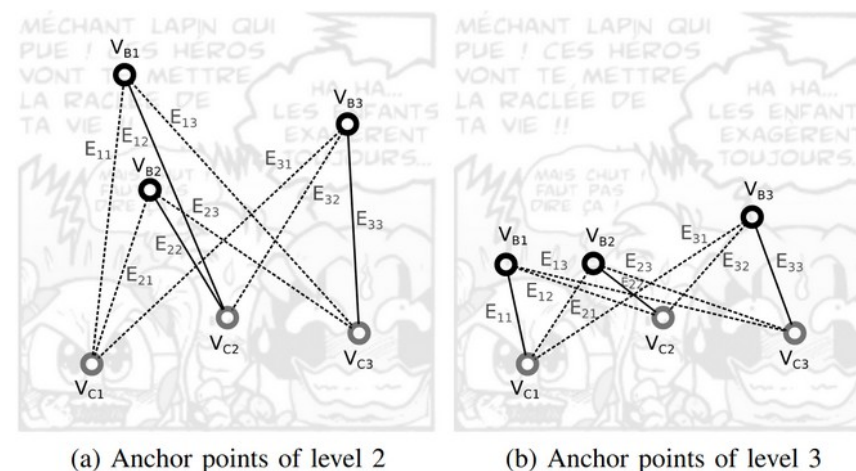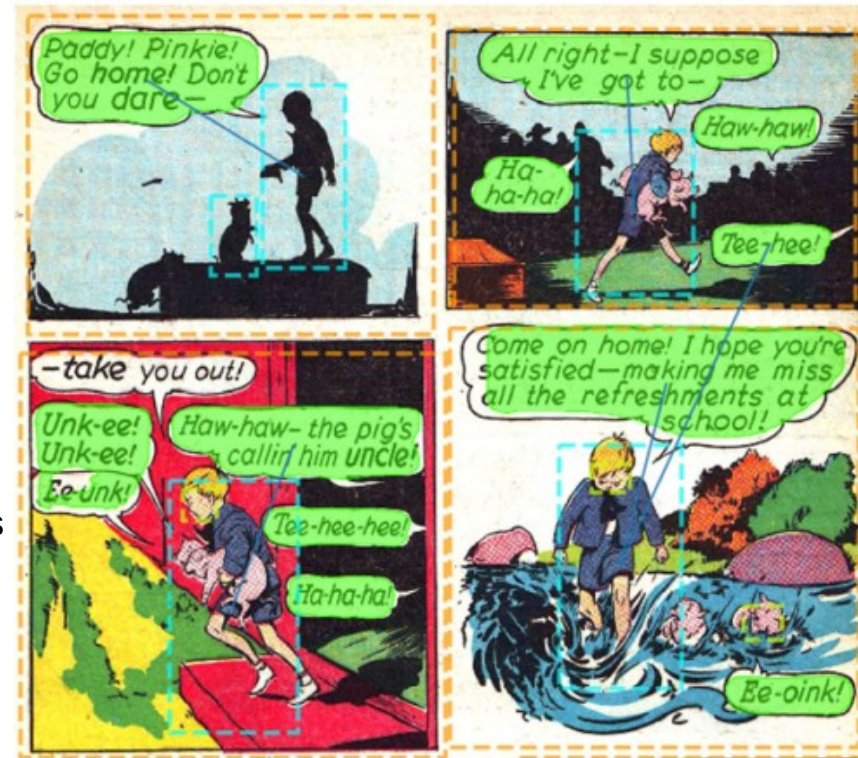(a) Anchor points of level 2   (b) Anchor points of level 3

tail position 🎯
+ direction ⬇️
= 🚀 association

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ETAT DE L'ART

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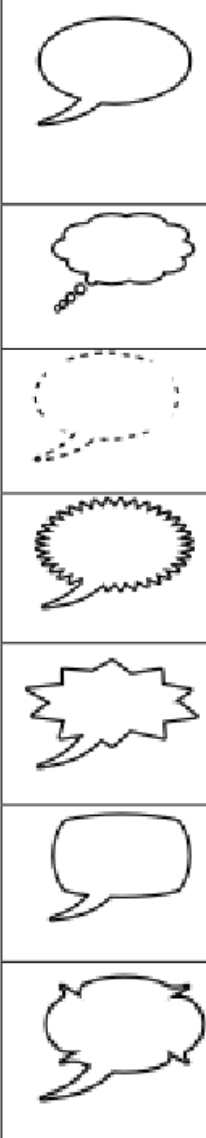
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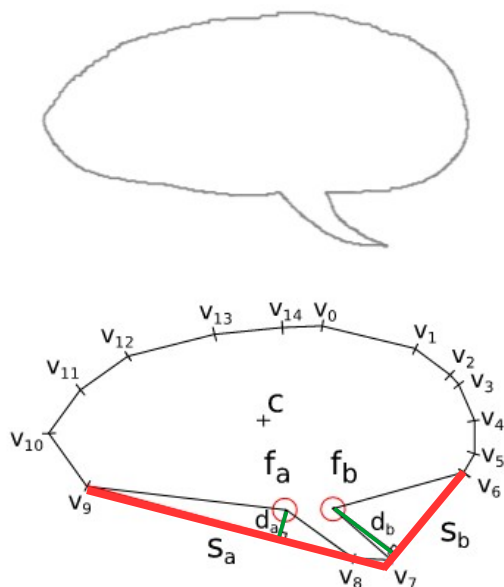© digitalcomicsmuseum.com – DCM dataset

DETECTION

Bulle & multi-bulle

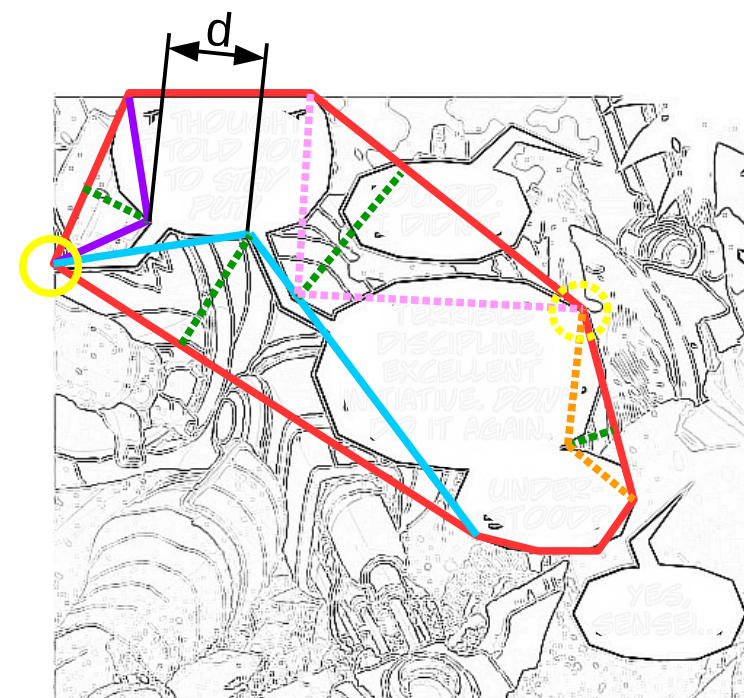Les deux plus grands ▎[1]   =>   Les deux grands ▎<u>consécutifs les plus proches</u> (d)

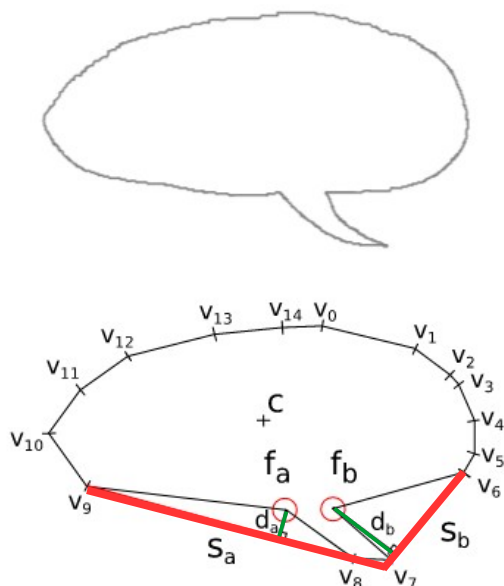© Ninja Turtles, the last Ronin - ECC

[1] Knowledge-driven understanding of images in comic books. Christophe Rigaud, Clément Guérin, Dimosthenis Karatzas, Jean-Christophe Burie, Jean-Marc Ogier. IJDAR 18 (1), pp.1433-2833 (2015)

Bulle & multi-bulle

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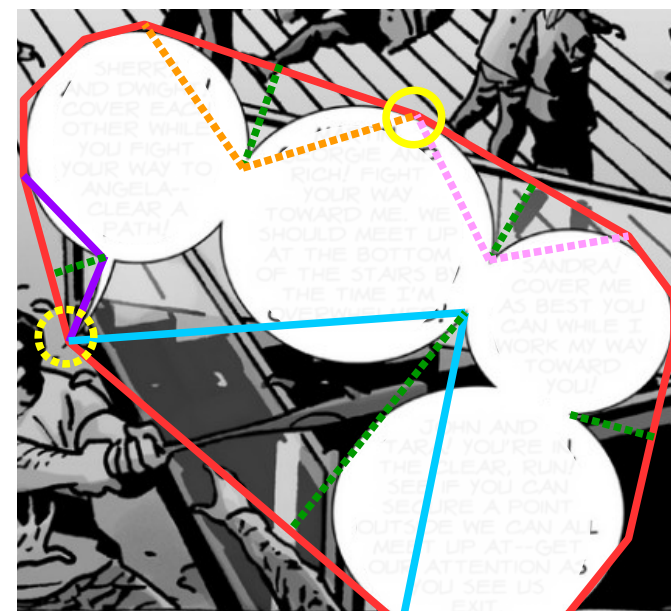
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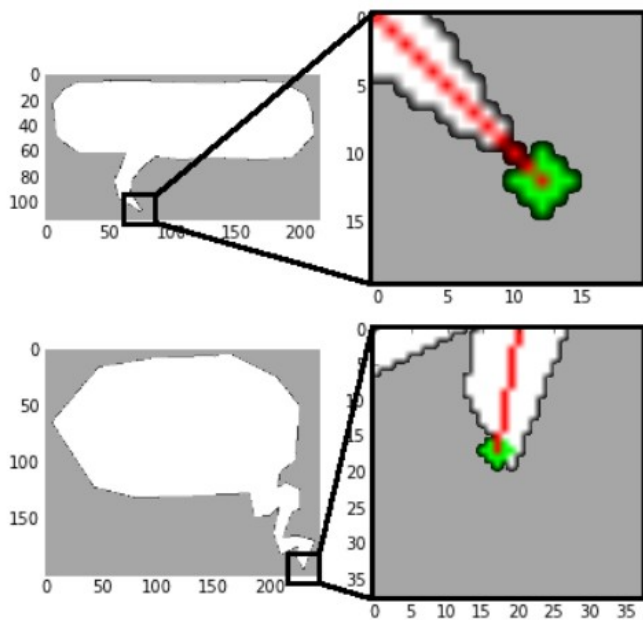

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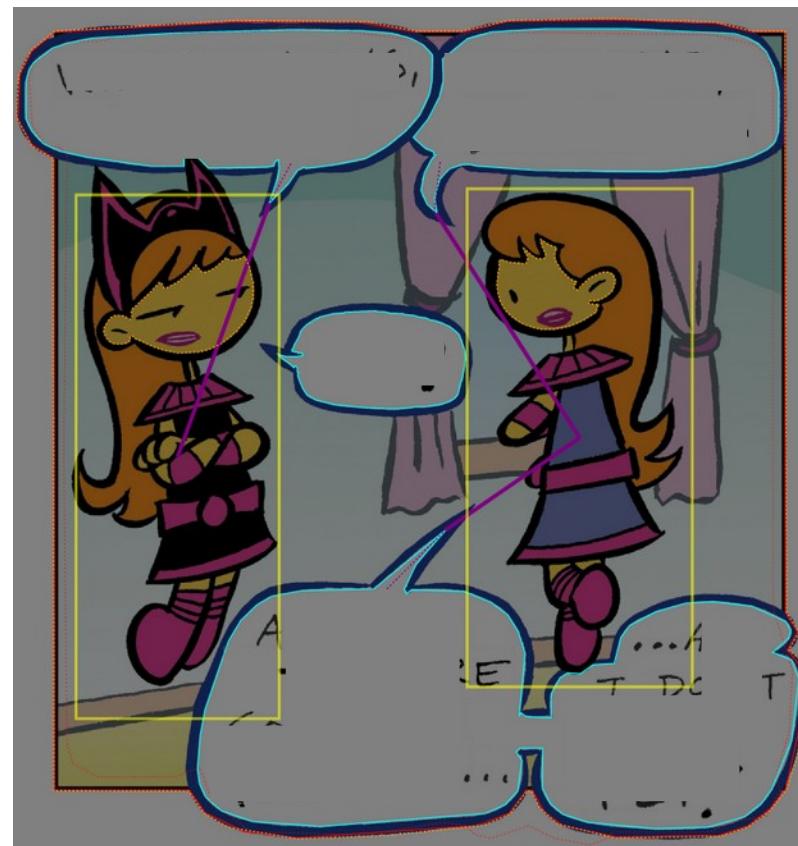

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ASSOCIATION

Queue → personnage

[1] Rigaud *et al.* using a line fitting algorithm (weighted least-squares).

[2] © Pequenos Titanes - ECC

[1] Knowledge-driven understanding of images in comic books. Christophe Rigaud, Clément Guérin, Dimosthenis Karatzas, Jean-Christophe Burie, Jean-Marc Ogier. IJDAR 18 (1), pp.1433-2833 (2015)
[2] Comic Digitization through the Extraction of Semantic Content and Style Analysis. Lenadora, Damitha, et al. 19th International Conference on Advances in ICT for Emerging Regions (ICTer). Vol. 250. IEEE (2019).

AUTO-EVALUATION

Indice de confiance

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$$c = \left(1 - \frac{a}{180}\right) * 100$$

Exemples :
$a = 15°$ → $c = 91.6\ \%$
$a = 90°$ → $c = 50.0\ \%$
$a = 170°$ → $c = 5.6\ \%$

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CONCLUSIONS

+ Adapté aux bulles, bulles multiples et bulles connectées

+ Robuste aux variations de forme des (multi) bulles

+ Auto-évaluation des résultats dans un contexte industriel

- Dépendance à la détection des bulles et des visages

- Contour intérieur seulement et distance bulle ⬌ personnage

- Limité à certains styles de queue

Collaborations public-privé **wanted,** l'analyse de BD recrute…
→ 1 postdoc ? : *contactez Jean-Christophe Burie* jean-christophe.burie@univ-lr.fr

© [1] Cohn, Neil

[1] Beyond word balloons and thought bubbles: The integration of text and image. Cohn, Neil. 2013. Semiotica. 2013(197): 35-63

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