Object Recognition in Illustrated Children Books: Challenges of Applying Computer Vision Systems

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Context and Goals

- Digital Humanities often text-oriented
- Images highly relevant for knowledge dissemination
- Book production greatly increased during the 19th century
- Improvement of printing technology led to more images
- Children and Youth literature contain more images than adult literature

Overall Development 19th Century

- Number of images per page increases in collection of historical children books
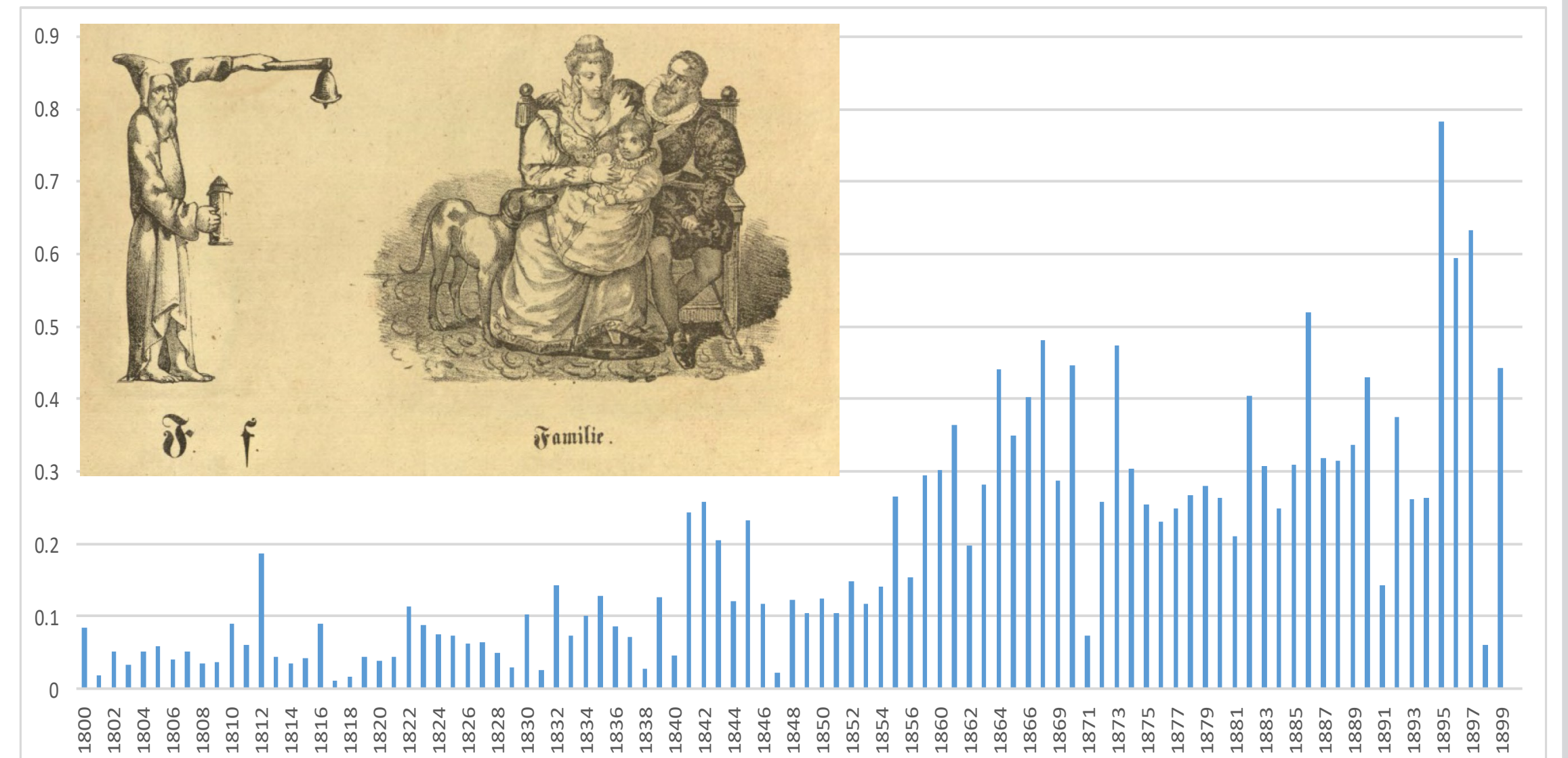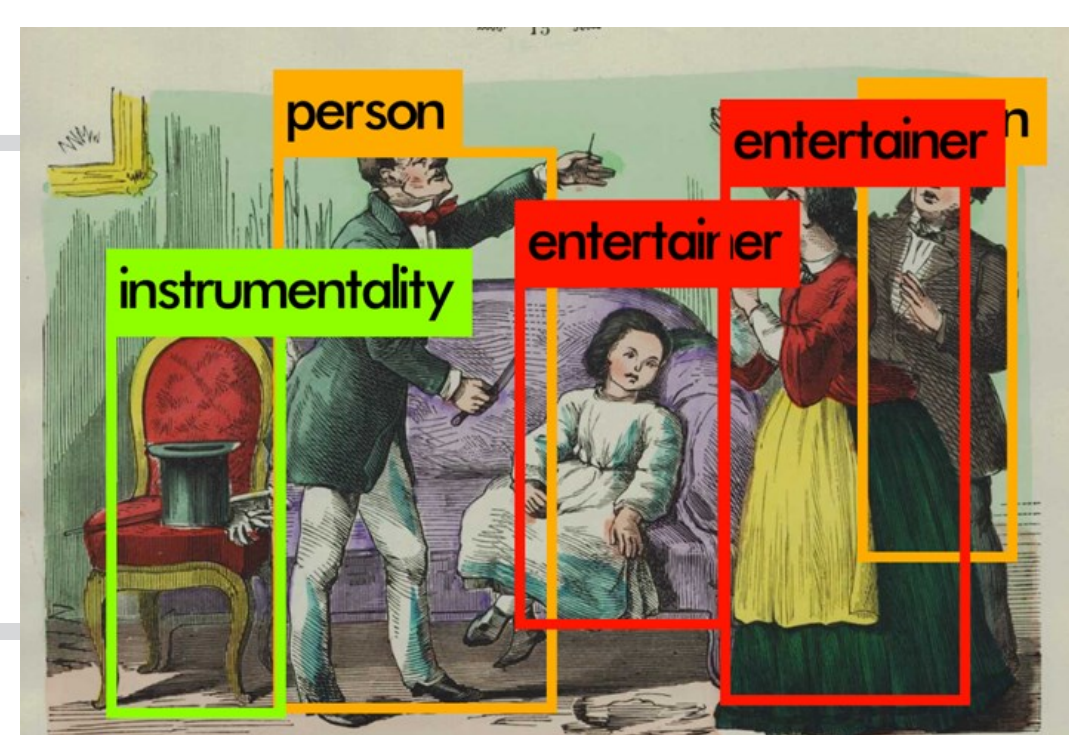

Image Processing for Children Literature

Object Types

- pre-trained version of Yolo system
- Hobrecker-Kollektion
- 168 books with some 16.000 pages
- 1.891 illustrations identified
- 4.600 objects recognized

Objekt	Count
Person	1.932
Organism	248
Artifact	188
Living thing	160
Entertainer	129
Animal	120
Worker	117
Bird	112
Horse	96

Differences between Book Types

Median	Illustr. per page	Person per illustr.	Horse per illustr.	Chair per illustr.
fiction books	0.400	1.143	0.020	0.0
non fiction books	0.526	0.737	0.042	0.0
Average	**Illustr. per page**	**Person per illustr.**	**Horse per illustr.**	**Chair per illustr.**
fiction books	0.448	1.446	0.103	0.072
non fiction books	0.566	1.151	0.128	0.035

Challenges

- Fictional characters?
- Modern objects?
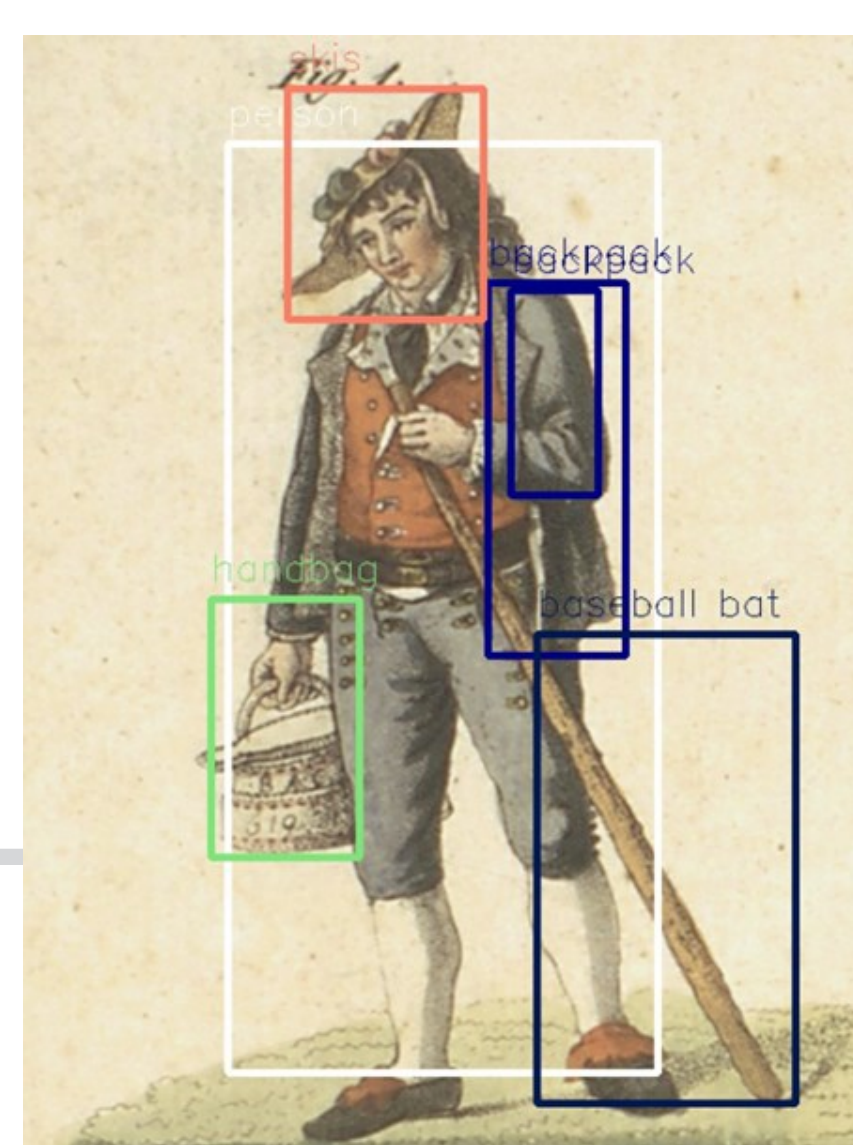
Future Work

- How can digital humanists benefit from object recognition in their research?
- What kind of parametrization is useful when searching for objects?

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