Printer ballistics through gray-level co-occurrence matrix of characters

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Abstract

We describe a technique for ballistics of printed documents, that is, link a printed document to a especific printer. The principle of this technique is extract some properties from the characters of printed and scanned documents, and relate this properties through a correlation matrix, making a "fingerprint" of characters (and related printers).

1. Introduction

Here goes the introduction and motivation of the work. Some directions for the paper:

- Diagrams and figures are encouraged for making the paper richer
- The sections proposed here are not hard-constrained. It means, you can propose other sections as well as change the existing ones.

2. State-of-the-Art

Here goes the state-of-the-art research (talk about prior work for solving the same problem).

3. Proposed Solution

Talk about the proposed solution for the selected problem.

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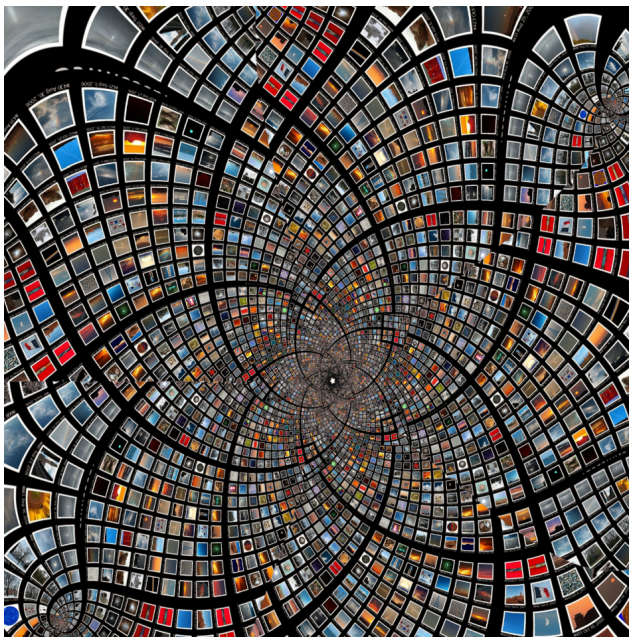

Figure 1. A figure example spanning one column only.

4. Experiments and Discussion

Talk about the experiments carried out and the obtained results.

Examples of citations [1, 2]. For direct citations use something like:

Silva [3] for papers with one author. Silva and Souza [4] for papers with two authors. Silva et al. [5] for papers with three or more authors.

Example of a figure of one column.

Example of a figure spanning two columns.

Example of a table spanning only one column:

Example of a table spanning two columns:

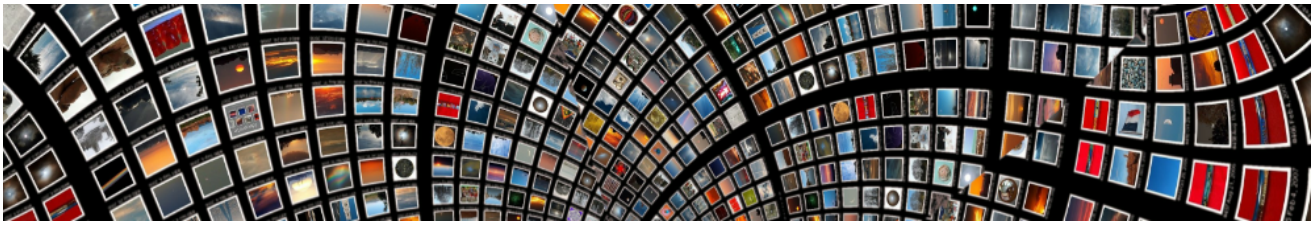

Figure 2. A figure example spanning two columns.

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring down the temperatures.
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland and Northern Ireland, but rain reaching the far northwest.
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and continue throughout the evening.

Team	P	W	D	L	F	A	Pts
Manchester United	6	4	0	2	10	5	12
Celtic	6	3	0	3	8	9	9
Benfica	6	2	1	3	7	8	7
FC Copenhagen	6	2	1	2	5	8	7

5. Conclusions and Future Work

Present the main conclusions of the work as well as some future directions for other people interested in continuing this work.

References

[1] Kai Ni, Anitha Kannan, Antonio Criminisi, and John Winn. Epitomic location recognition. In *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR)*, Anchorage, AK, USA, 2008. 1

[2] Kai Ni, Anitha Kannan, Antonio Criminisi, and John Winn. Epitomic location recognition. *Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 31(12):2158–2167, 2009. 1

[3] Fulano Silva and Beltrano Souza. Hey! this is my paper. In *European Conference on Nothing (ECN)*, pages 000–007, Graz, Austria, 2010. 1

[4] Fulano Silva. A paper on everything useless. In *European Conference on Nothing (ECN)*, pages 008–014, Graz, Austria, 2010. 1

[5] Fulano Silva, Beltrano Souza, and Sicrano Rocha. Revisiting the classical publishing problem. In *European Conference on Nothing (ECN)*, pages 015–021, Graz, Austria, 2010. 1