

# Real-Time Document Image Retrieval with a 1 Million Pages Database Running on a Laptop

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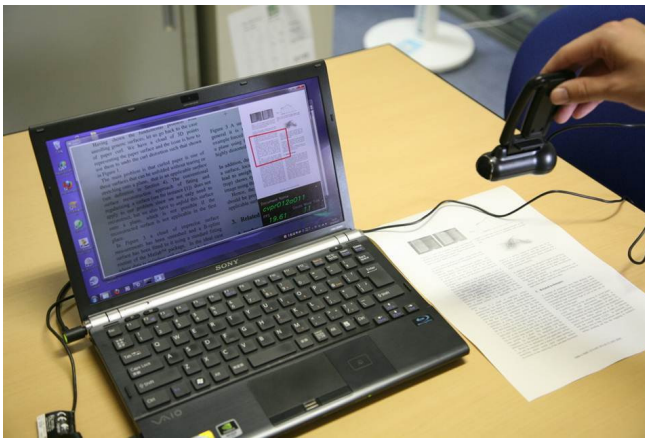


Figure 1. A scene of real-time demo system.

We propose a real-time document image retrieval method for a large-scale database in CBDAR2011 oral session [1]. In this paper, we introduce the real-time demo system using a web camera. As shown in Fig. 1, this system runs on a laptop and a user can retrieve document images by capturing a printed page with a web camera.

Figure 2 shows retrieval processing. As shown in Fig. 2, a retrieval result is calculated based on correspondences of feature points.

This demo system has several characteristics as follow.

- This system runs with a large-scale database.
  - 1 million pages on laptop with 8GB memory
- This system runs efficiently.
  - About 15 frame per second
- This system has robustness against following various types of disturbances.
  - Rotation
  - Scaling
  - Perspective distortion
  - Occlusion
  - Curvature
- Augmented Reality to the printed documents is real-

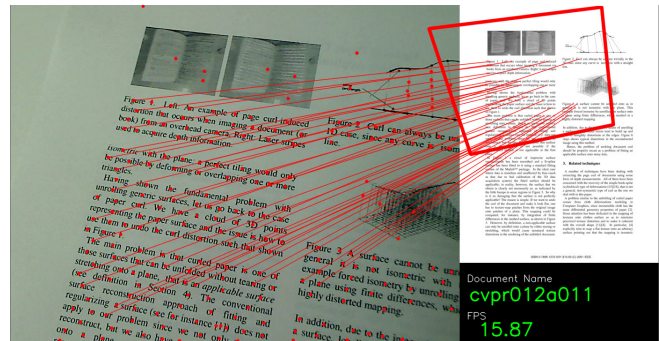


Figure 2. Correspondence of feature points.

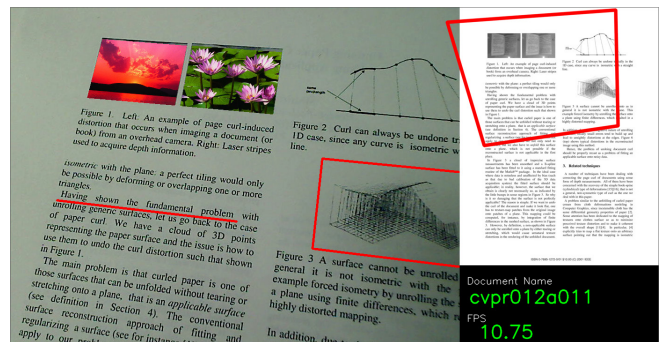


Figure 3. Augmented Reality to a printed document.

ized.

- An example is shown in Figure 3; the top left figures have been altered.
- Without character recognition, a user enable to obtain words and text in the captured region.

## REFERENCES

- [1] K. Takeda, K. Kise, and M. Iwamura, "Memory reduction for real-time document image retrieval with a 20 million pages database," *Proceedings of the Fourth International Workshop on Camera-Based Document Analysis and Recognition (CBDAR2011)*[to appear], 2011.