Digital Archiving Technology Group

Project Leader

Kozaburo Hachimura

（Professor, Graduate School of Science and Engineering, Ritsumeikan University）

Image Analysis of Historical Documents and Paintings

Image Analysis of Historical Documents and Paintings

- Kozaburo Hachimura
- Mitsu Yoshimura
- Hiroyuki Sekiguchi
- Ross Walker

- Similarity-based Retrieval of Ukiyoe Paintigs
- Authorship Identification of Ukiyoe by Using Rakkan Images
- Image Analysis of Historical Books

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Similarity-based Retrieval of Paintings

- Similarity measures
  - Color Histogram
  - Composition of Colors
- Estimation of User's Intention

Query1 → Result1 → Query2 → Result2

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Authorship Identification of Ukiyoe Paintings

- Extraction and Matching of Rakkan Images

Extraction of Signs

Matching

- Automatic Extraction of Rakkan Images
- Weighted Directional Histogram
- Identification Experiments

Rakkan Feature Extraction

- The weighted direction index histogram

Subdivided into 7x7 area　Gaussian filter　dir 1　dir 2　dir 3　dir 4

Histogram of direction code

Direction Histogram

64 (4x4x4) weighted direction index histogram

Rakkan Identification Results

Nagahide 100.0%		Kunichika 88.8%	
Bunkyo 98.8%		Toyokuni 83.8%	
Toukyo 96.3%		Kunikazu 78.8%	
Hirosada 90.0%		Shuntei 75.0%	
Sadanobu 90.0%		Hiroshige 72.5%	

Processing of Japanese Historical Books

Character Segmentation & Recognition

Character Segmentation

Character Spotting Based on the similarity

Key Word in Context

Dictionary for cursive scripts

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