

Panel Discussion on: More Advanced Recognition Technologies

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Examples of the mail pieces to be recognized



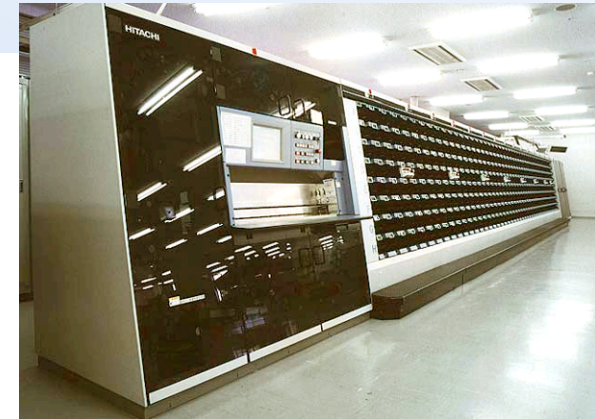
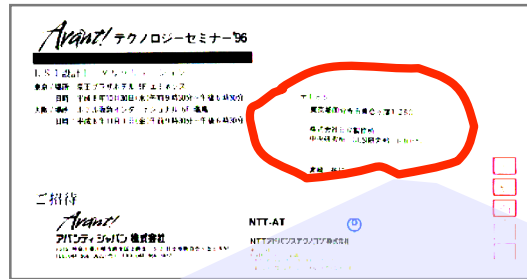
川越市小谷

川越市上野田

川越市新宿町

97.8.29 (土) 川越市上野田町17-1
〒350-0101 川越市上野田町17-1
〒350-0101 川越市上野田町17-1

Address Recognition Tasks



Destination Address Recognition

Scanning
the image

Address
block
identification

Postal code recognition

City-town phrase recognition

Address number recognition

Building and room numbers
recognition

Recipient name recognition

Challenges for Better Recognition Performances

Self-machine learning for better performances:

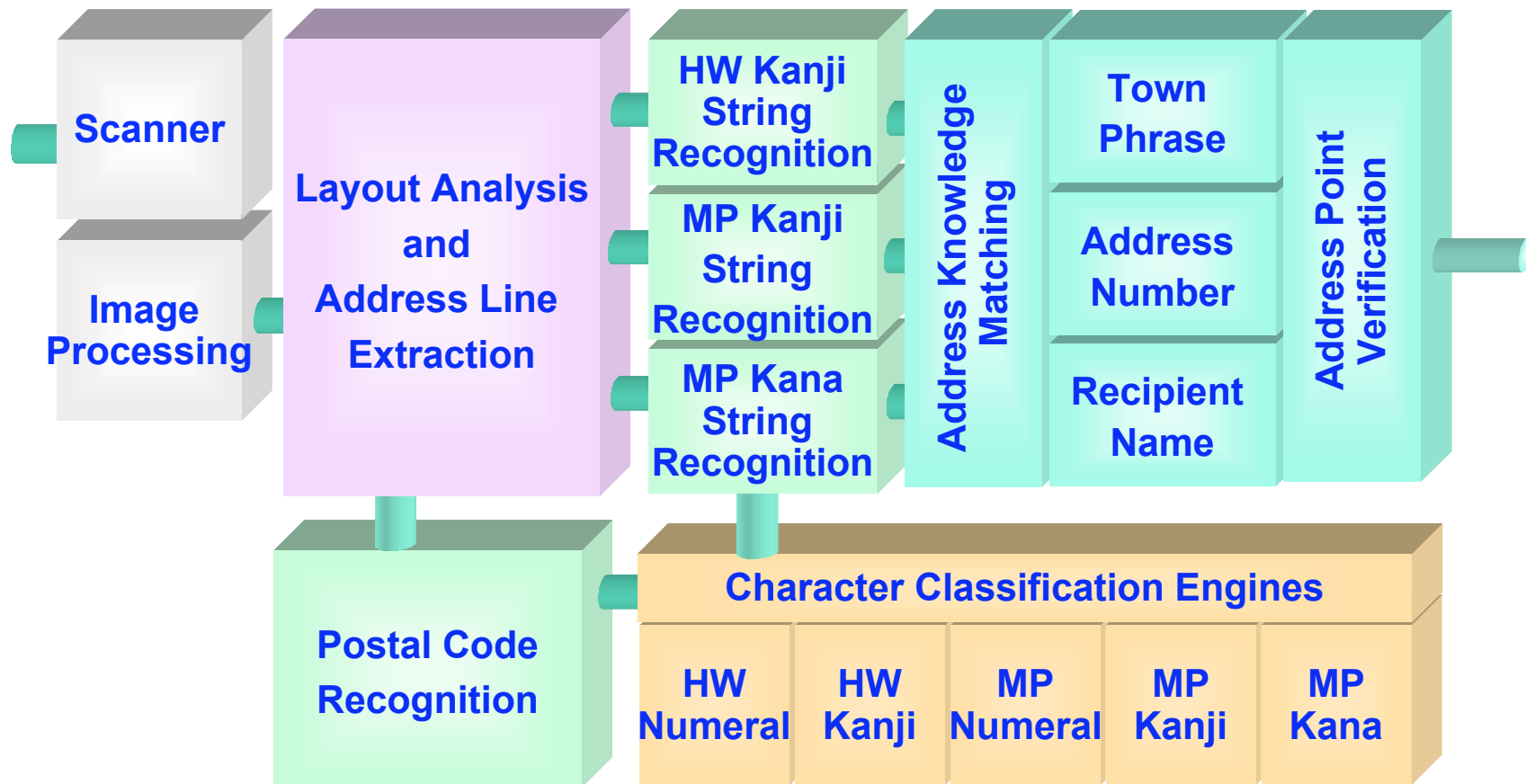
- Make good use of human video coding results
- Decision parameters adaptation
- Classifier adaptation
- Stochastic learning of address knowledge

Other approaches:

- Combined multi-vendor recognition engines
- More systematic application of “perturbation”
- Systematic error detection and system improvements
- Cost sensitive classification/rejection strategies
- Business model considerations to give vendors the incentives to continuous improvements

Challenge 1: Detect the Malfunction Modules

- There are many parameters determining the recognition behavior, which are candidates of modification.



Challenge 2: Better Knowledge Matching

Knowledge representation		Recognition result representation		
		1	2	3
		Deterministic character string	Linear lattice of character classification	Network of segmentation - classification
a	Set of words & hierarchy information	Boyer Moore matching algorithm	1st generation (flexible)	
b	TRIE structure	Aho Corasick matching algorithm		3rd generation (non-flexible)
c	Finite State Transition Diagram	<i>grep</i> command in Unix		
d	Recursive Transition Network	Parsing algorithm	2nd generation (flexible)	Ext. 3rd gen. Non-flexible
e	Stochastic grammar			4th generation

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