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Pattern Recognition Technique

A new, reliable technique for pattern recognition, especially of alphanumeric characters, successfully detects out-of-register patterns. It operates regardless of pattern rotation, translation, or magnification. must be considered together in the design of an optimum system.

The system illustrated uses a random number generator feeding a flying-spot scanner to generate
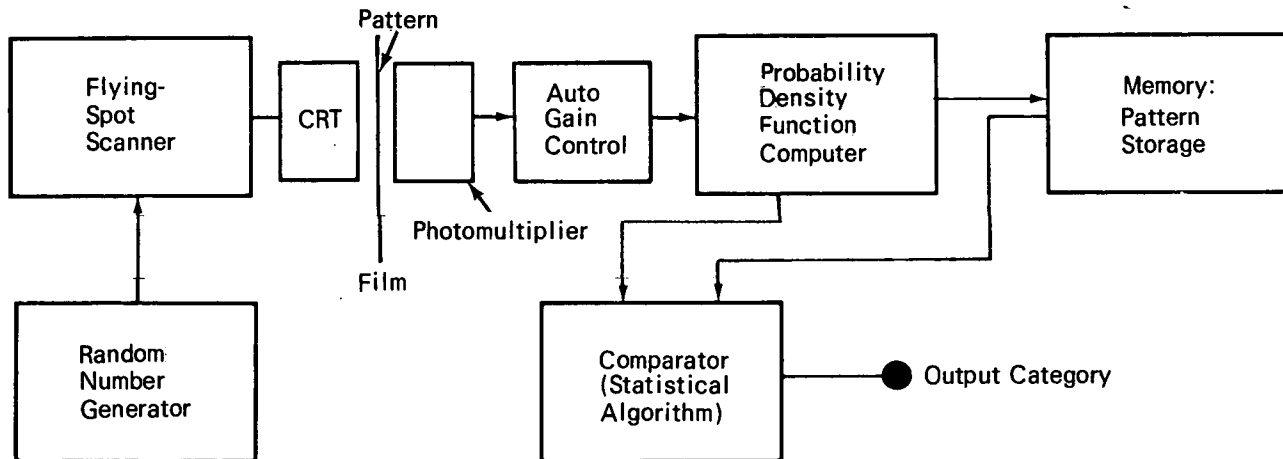
The technique can improve the accuracy and reduce the cost of various optical character recognition devices and page readers, and could be used to provide data input to a computer.

The technique is based on determining the probability density function (PDF) of intersection lengths of random lines with a given pattern. Since the PDF is a function of pattern shape only, coupling it with an identification algorithm yields efficient statistical pattern classification.

Pattern recognition is essentially a two-step process. First, the pattern must be converted into a statistically convenient form. This process, usually called feature extraction, is most often performed by the direct measurement of some quality of the pattern. Second, the data thus obtained must be manipulated and the pattern category determined. The two steps

random lines on a CRT. These lines crisscross the pattern and are detected on a photomultiplier grid or retina. The output of the retina, accumulated over a period of time, is an empirical PDF that is unique for each pattern class. The PDF itself, or the function resulting from a secondary algorithm, is applied to the comparator, and a statistical algorithm is applied to obtain a pattern classification.

Note:

Requests for further information may be directed to:

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Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

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