

# **The Evaluation of Computational Complexity of Moment Invariants in Image Processing**

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# ABSTRACT

The computational complexity in calculating the geometric, central moments and Hu's moment invariants is analyzed. The analysis considers number of multiplication and addition operations required for calculating moment invariants and share of computational resources required for central moments calculation. The method of computational costs calculation is proposed. The method can be applied to estimate computational costs of moment invariants of any order and for solving the problem of choosing minimal invariant sets that provides image recognition maximum quality.

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# EXISTING SYSTEM

- A general approach to moment invariants of arbitrary order construction has been proposed.
- This approach is based on complex moments. The application of moment invariants in image recognition is impossible without development of efficient algorithms of selection.
- The most informative features providing a reasonable balance between computational complexity and recognition quality.
- To solve the task of choosing minimal invariants set that provides maximum recognition quality in the possible limitations.

# PROPOSED SYSTEM

- The multiplication and addition operations regardless of the method they are implemented in a computer are accepted as units of complexity.
- For evaluating invariants computational complexity it is more convenient to use parameters normalized to image size.
- The method can be applied to estimate computational costs of moment invariants of any order and for solving the problem of choosing minimal invariant sets

# SYSTEM REQUIREMENTS

## HARDWARE REQUIREMENTS:

- Processor - intel core i3
- RAM - 2GB
- Hard Disk - 20 GB

## SOFTWARE REQUIREMENTS:

- Tool - MATLAB R2016
- Operating system - Windows 7,8

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# REFERENCE

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