

Enter Search Query

Search

Advanced Search

[Home](#) | [Digital Library](#) | [Site Map](#) | [Store](#) | [Contact Us](#) | [Press Room](#) | [Shopping Cart](#) | [Help](#) | [Login](#)

# digital library

## DIGITAL LIBRARY HOME

### BROWSE BY TITLE

### BROWSE BY SUBJECT

### SEARCH

### LIBRARY/INSTITUTION RESOURCES

### RESOURCES

### SUBSCRIPTION

### ABOUT THE DIGITAL LIBRARY

[Archive Page](#) >> [Table of Contents](#) >> [Abstract](#)

18th International Conference on Pattern Recognition (ICPR'06) pp. 121-124

## A Unified Formulation of Invariant Point Pattern Matching

 Tiberio S. Caetano, National ICT Australia and Australian National University, Canberra, Australia  
 Terry Caelli, National ICT Australia and Australian National University, Canberra, Australia

 Full Article Text:  PDF  BUY ARTICLE

### DOI Bookmark:

<http://doi.ieeeecomputersociety.org/10.1109/ICPR.2006.192>

### Abstract

We present a unified framework for modeling and solving invariant point pattern matching problems. Invariant features are encoded as potentials in a probabilistic graphical model. By using a specific kind of graph topology, different types of invariant matching models can be implemented via tree-width selection. Models with tree-widths 1, 2, 3 and 4 implement translation, similarity, affine and projective invariant point matching, respectively. The optimal match is then found by exploiting the Markov structure of the graph through the generalized distributive law in a dynamic programming setting. In the absence of noise in the point coordinates, the solutions found are optimal. Our early experiments suggest the approach is robust to outliers and moderate noise.

### Additional Information

[Back to Top](#)

**Citation:** Tiberio S. Caetano, Terry Caelli, "A Unified Formulation of Invariant Point Pattern Matching," *icpr*, pp. 121-124, 18th International Conference on Pattern Recognition (ICPR'06), 2006.

Usage of this product signifies your acceptance of the [Terms of Use](#).

This site and all contents (unless otherwise noted) are Copyright © 2006, IEEE, Inc. All rights reserved.

### Similar Articles

**Abstract Contents**  
[Abstract](#)  
[Citation](#)

### Download Citation

[Ascii Text](#)  
[BibTex](#)  
[RefWorks](#)  
[Procite/RefMan/Endnote](#)

### Free access to

- Abstracts
- Selected PDFs

### Electronic subscribers log in to

- Access HTML/PDFs of full text articles
- Download full issue (ZIP of PDFs)

### Subscription information

[Get a Web account](#)

### Peer Review Notice

[Give us Feedback](#)