Final Scientific Report on Grant AFOSR-77-3271
"THEORY OF IMAGE ANALYSIS AND RECOGNITION"

1 May 1977 - 31 December 1982

Submitted to:
Directorate of Mathematical and Information Sciences
Air Force Office of Scientific Research
Bolling Air Force Base, D. C. 20332

Submitted by:
Computer Science Center
University of Maryland
College Park, MD 20742

Principal investigators:
Azriel Rosenfeld, Research Professor
Larry S. Davis, Associate Professor

January 24, 1983

Approved for public release; distribution unlimited.
The research conducted under the grant was concerned with three theoretical aspects of image analysis: (1) statistical image modeling and texture analysis; (2) digital geometry (geometrical properties of subsets of digital images); and (3) parallel image processing (including formal models for parallel image recognition). During the period 1 May 77-31 Dec 82, 116 technical reports were issued on the grant. Nearly all of these have been published or in process of acceptance for publication. A bibliography of these reports is given. Seven students wrote Ph.D. dissertations with the support of the grant.
The research conducted under Grant AFOSR-77-3271 was concerned with three theoretical aspects of image analysis:

a) Statistical image modeling and texture analysis
b) Digital geometry (geometrical properties of subsets of digital images)
c) Parallel image processing (including formal models for parallel image recognition)

During the period May 1977 - December 1982, 116 technical reports were issued on the Grant. Nearly all of these have been published or in process of acceptance for publication. A bibliography of these reports is given below.

Seven students wrote Ph.D. dissertations with the support of the grant:

<table>
<thead>
<tr>
<th>Area</th>
<th>Student</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Narendra Ahuja</td>
<td>Image models</td>
</tr>
<tr>
<td></td>
<td>Ramalingam Chellappa</td>
<td>Image models</td>
</tr>
<tr>
<td></td>
<td>Matti Pietikainen*</td>
<td>Texture analysis</td>
</tr>
<tr>
<td>b</td>
<td>David G. Morgenthaler</td>
<td>3D digital geometry</td>
</tr>
<tr>
<td>c</td>
<td>Angela Y. Wu</td>
<td>Parallel computation</td>
</tr>
<tr>
<td></td>
<td>Charles R. Dyer</td>
<td>Parallel computation</td>
</tr>
<tr>
<td></td>
<td>Todd R. Kushner</td>
<td>Parallel computation</td>
</tr>
</tbody>
</table>

*Degree awarded by the University of Oulu, Finland

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFSRC)
NOTICE OF TRANSMITTAL TO DTIC
This technical report has been reviewed and is approved for public release (DAW 180-12).
Distribution is unlimited.
MATTHEW J. KERPER
Chief, Technical Information Division
Bibliography


