CAVIAR SURVEILLANCE
GROUND-TRUTH DATA SETS

ROBERT B. FISHER
INRIA SOPHIA ANTIPOLIS & UNIV. OF EDINBURGH

DATA SETS
GROUND TRUTH MODEL
XML ENCODING
ISSUES

FUNDING: EC’S INFORMATION SOCIETY TECHNOLOGY’S PROGRAMME PROJECT IST 2001 37540.
TYPICAL LOBBY FRAME

INDIVIDUALS, GROUP
TYPICAL SHOPPING FRAMES

SYNCHRONIZED PAIRS: WIDE BASELINE STEREO, MULTI-CAMERA TRACKING
THE DATA SETS

PUBLIC SPACE SURVEILLANCE: INRIA JULY 2003
SEQUENCES: 28
FRAMES: 26419
SCRIPTED ACTIVITIES: WALKING, BROWSING,
COLLAPSE, LEAVING OBJECT, MEETING,
FIGHTING
2+ SEQUENCES PER EACH ACTIVITY TYPE

SHOPPING SURVEILLANCE: LISBON JANUARY 2004
SEQUENCES: 26*2
FRAMES: 72518
SCRIPTED ACTIVITIES: WALKING, MEETING,
WINDOW SHOPPING, SHOP ENTER, SHOP EXIT
2+ SEQUENCES PER EACH ACTIVITY TYPE
ACTIVITY DESCRIPTION MODEL 1

A HIERARCHY OF DESCRIPTIONS (CROWLEY ET AL)

TARGETS:
MOVING INDIVIDUALS AND GROUPS OF INDIVIDUALS

TARGET DESCRIPTION:
BOUNDING BOX ID, CENTRE COORDINATES, WIDTH, HEIGHT, ORIENTATION OF MAIN AXIS

MOVEMENT LEVEL LABEL:
INACTIVE, ACTIVE, WALKING, RUNNING

SITUATION LABEL:
INSTANTANEOUS SITUATION DESCRIPTION,
EG. BROWSING, IDLE, JOINING A GROUP
ROLE LABEL:
WHAT ROLE THE TARGET HAS IN THE SITUATION,
EG. LEFT OBJECT

CONTEXT LABEL:
WHAT THE TARGET IS DOING IN THE WHOLE
SEQUENCE: EG. WINDOW SHOPPING
ACTIVITY DESCRIPTION MODEL 2

BROWSE CONTEXT: A SEQUENCE OF “MOVE” AND “BROWSE” SITUATIONS

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>ALLOWED ROLES</th>
<th>ALLOWED ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOVE</td>
<td>WALKER, BROWSER</td>
<td>WALKING</td>
</tr>
<tr>
<td>BROWSE</td>
<td>BROWSER</td>
<td>ACTIVE, INACTIVE</td>
</tr>
</tbody>
</table>
<dataset name="LeftBag"> ... <frame number="517">
  <objectlist>
    <object id="2">
      <orientation>10</orientation>
      <box xc="210" yc="247" w="55" h="39" />
      <appearance>visible</appearance>
      <hypothesislist>
        <hypothesis id="1" prev="1" evaluation="1.0">
          <movement evaluation="1.0">walking</movement>
          <role evaluation="1.0">walker</role>
          <context evaluation="1.0">immobile</context>
          <situation evaluation="1.0">moving</situation>
        </hypothesis>
      </hypothesislist>
    </object>
  </objectlist>
</frame> ... </dataset>
LABELLING PROCEDURE

10 LABELLERS

JAVA LABELLING TOOL

AUTOMATIC SYMBOLIC LABEL VALIDATION

HUMAN CHECKERS (RBF, JB)

1 SEQUENCE WITH 3 LABELLINGS FOR COMPARISON
JAVA LABELLING TOOL

CAVIAR ground truth
ACCESS

http://homepages.inf.ed.ac.uk/... rbf/CAVIARDATA1/

1462 DOWNLOADS SINCE MARCH 2005 (MANY BEFORE BUT NO COUNTER)

ALL FRAMES + MPG
ISSUES

• GROUND TRUTH VARIABILITY
• OMNISCIENT BEHAVIOUR LABELING
• CONCATENATED CONTEXTS
• WHAT IS A GROUP?
• MULTIPLE VERSUS UNIQUE LABELS
• BOUNDING BOX VERSUS TARGET OUTLINE