**Motivation**

- Which pill to take?
- Functions and effects?
- Dosage?

**System Overview**

- **Query Image**
- **Segmentation**
- **Feature Extraction**
- **Matching**

**Segmentation**

- Using color clustering (K-Means, etc)
- Skin color detection
- Shadow removal
- Adaptive object segmentation

**Feature Extraction**

**Color**

- For a given pill, determine:
  1. Number of major colors
  2. Major color classes
- Classifying pills to these three classes

**Imprint Feature** (Still in progress...)

- Repaired edge image
- Remove boundaries
- Extract/Describe features

**Imprint Feature** (Still in progress...)

**Shape Feature**

- Pill modeling using polygons
- Online public image databases

**Research Results** (as of Sep. 3, 2010)

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Number of gallery images</th>
<th>Number of query images</th>
<th>Number of correct answers</th>
<th>Accuracy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>41</td>
<td>31</td>
<td>26</td>
<td>84%</td>
<td>Including complicated and irregular shapes</td>
</tr>
<tr>
<td>2nd</td>
<td>23</td>
<td>13</td>
<td>12</td>
<td>92%</td>
<td>Simple shapes e.g. circle, polygon</td>
</tr>
</tbody>
</table>