IC Cam: Mobile IC Package Recognition
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Motivation
Modern printed circuit boards (PCBs) typically contain many integrated circuits (ICs). Identifying and obtaining information about the ICs on a board can be very tedious. Our project, implemented as an iPhone app, aims to automatically locate and identify the ICs given an image of a circuit board.

System Architecture
- iPhone (image capture/display)
- Server (image processing)

Functionality
- Rotation invariant
- Robust to non-chip objects
- Best with even lighting
- Sensitivity to glare, blur, and sensor noise

Image Processing Pipeline
- Chip corner detection
- Rotation correction, chip extraction
- Preprocess for OCR (scaling, threshold, morphological opening)
- OCR (Tesseract)

Chip Segmentation
- MAP detection, erode/dilate

Determine best match in part name dictionary (Levenshtein)

References