**Motivation**

Main applications for bill recognition:
- assist visually impaired
- ATMs, automated change counting for grocery stores and vending machines, etc.

**Current Limitations**

- New banknote design is not supported
- Maximum obstruction ~25% of the area
- Folded banknotes are not recognized (but wrinkles are ok)

**Detection Flow**

1. Convert to grayscale
2. Gaussian low-pass filter
3. Canny edge detector
4. Close edge gaps
5. Contour hierarchy, select the lowest hierarchy level (rectangle at least 300x170)
6. SURF keypoint matcher
7. Matching bill found?
   - no
   - yes: Up one level in hierarchy
8. Done!

**Experimental Results**

- Input image
- Gray-scale image, high frequency noise removed
- Canny edges detected
- Small edge gaps closed
- Detected areas with matching sets of SURF keypoints