Overview

- Objective: design and implement a mobile application that guides people solve jigsaw puzzles
- Challenge: Image Imperfection: background noise, scaling, rotation and perspective distortion

Mobile phone Implementation: user-friendly interface, balanced speed and performance

Application Test Results

- Preprocessing and Image Segmentation
- Speeded-Up Robust Features (SURF)

System Performance

- Typical Identified Piece Size: 1.5 inch by 1.5 inch
- Typical Processing Time: <5 secs
- Robustness Against Rotation: Yes
- Robustness Against Camera Distance and Angle: Yes

Discussion

- Templates and pieces with more features have a higher chance of detection and are more robust against distortion.
- May combine with other algorithms (SIFT, correlation) to compensate SURF method.

References