1. Summary of Related Studies

Related Study	Description
An Arabic Optical Braille Recognition System [Al-Salman et al., 2007]	This project looks at developing a system to recognize an image of embossed Arabic Braille and then convert it to text. It particularly aims to build fully functional Optical Arabic Braille Recognition system. It has two main tasks, first is to recognize printed Braille cells, and second is to convert them to regular text. Converting Braille to text is not simply a one to one mapping, because one cell may represent one symbol (alphabet letter, digit, or special character), two or more symbols, or part of a symbol. Moreover, multiple cells may represent a single symbol. The project deals with a double sided Arabic Braille. One problem that the proponents tend to solve in the study is the de-skewing of the Braille document. The study yielded an accuracy rate of 98%.

Related Study	Description
A Robust Braille Recognition System [Antonacopoulos and Bridson, 2004]	This paper describes a new system that recognizes Braille characters in scanned Braille document pages. Unlike most other approaches, an inexpensive flatbed scanner is used and the system requires minimal interaction with the user. A unique feature of this system is the use of context at different levels (from the pre-processing of the image through to the post-processing of the recognition results) to enhance robustness and, consequently, recognition results.
A Software Algorithm Prototype for Optical Recognition of Embossed Braille [Wong et al., 2004]	This paper proposes a software solution prototype to optically recognize single sided embossed Braille documents using a simple image processing algorithm and probabilistic neural network. The output is a Braille text file formatted to preserve the layout of the original document which can be sent to an electronic embosser for reproduction.

Related Study	Description
Deskewing Perspectively Distorted Documents: An Approach Based on Perceptual Organization [Pilu, 2001]	This work deals with the recovery of illusory linear clues from perspectively skewed documents with the purpose of using them for rectification. The computational approach proposed implements the perceptual organization principles implicitly used in textual layouts. The numerous examples provided show that the method is robust and viewpoint and scale invariant.
Optical Braille Recognition Using Character Isolation Box and Pattern Generation [Lao, 2009]	This study deals with recognition of Grade 1 Braille by applying the Character Isolation Box algorithm and Pattern Generation algorithm. The main concept is to cut the whole Braille document into Braille cells that can be recognized by Pattern Generation algorithm. The study yielded an accuracy rate of 85 percent.

Table 2.1
Summary of Related Studies