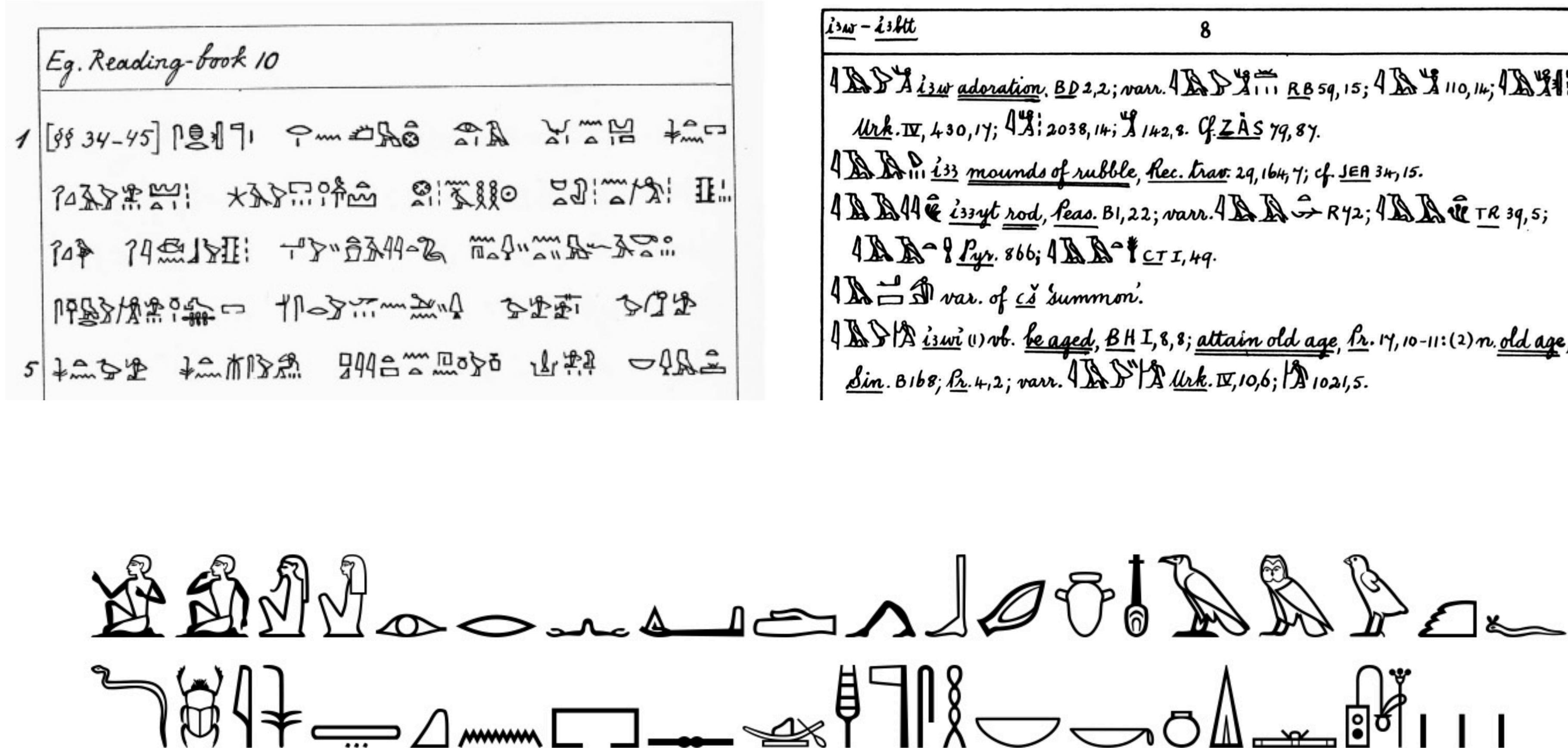


HIEROGLYPH CLASSIFIER

Ingy Nazif & Alia Hassan

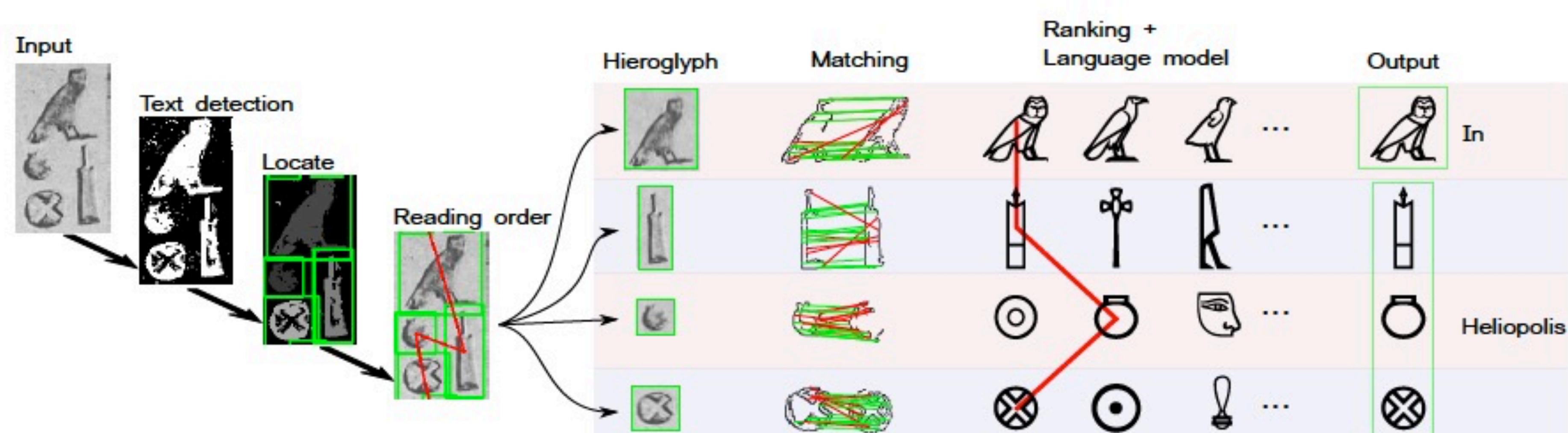
Problem Definition and Motivation

Many of the published texts in the field of hieroglyphs contain handwritten texts, which are often difficult to decipher because of the many different variations in the way each character can be written. A program that can take the input of a piece of text and convert it from handwritten to a standardized font would be extremely useful in this field of study, easing the understanding and digitization of Ancient Egyptian texts and books.



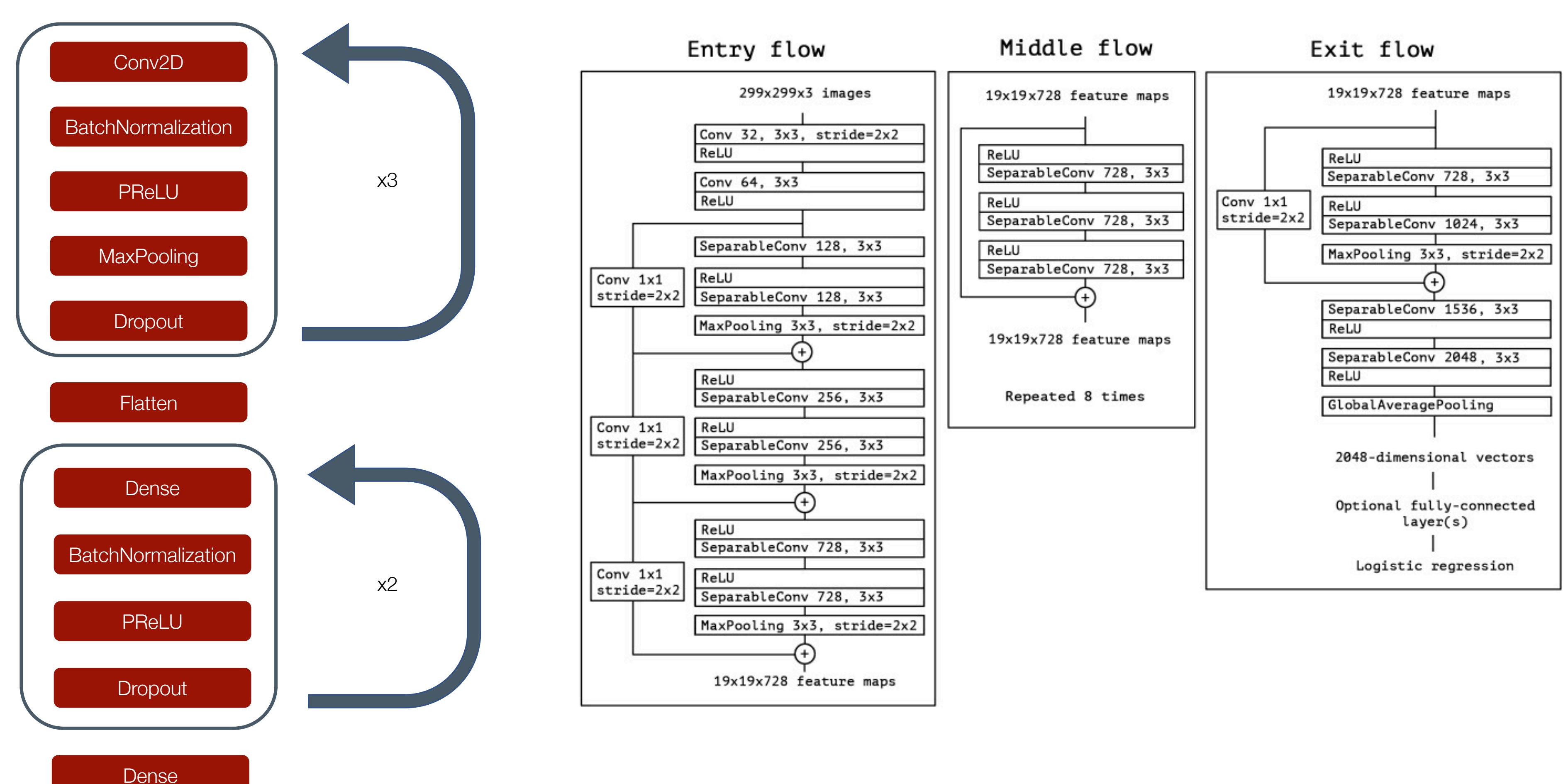
Existing Work

Tomb Reader is a program that aims at automatically recognizing hieroglyph through image retrieval from tomb walls (hence the name Tomb Reader). An app was implemented but it is only available to a local museum in the Netherlands for beta testing since 2015.



Proposed Solution

The network architecture we chose to use was a convolutional neural network. We split our dataset into textbook characters and handwritten characters. We found a network pre-trained on the Kanji character set and fine-tuned it to fit our textbook data (1235 training, 200 validation). We also used the Xception network pre-trained on the ImageNet dataset to train on our handwritten data (1296 training images, 358 validation images).



Training and Results

We trained two separate classifiers in the end; one for the writing found in textbooks, another for our handwritten data.

