Project Title: Ancient Discovery: AI for Hieroglyphics Recognition
Project Supervisor: Dr. Ruihai Dong
Number of Students: 3
Suits students who like: Artificial Intelligence, Natural Language Processing, Computer Vision, Deep Learning

Hieroglyphics, such as Oracle bone script in China or Egyptian Hieroglyphs are a valuable part of our cultural heritage, related to the early stages of human civilization. They play an essential role for scholars studying ancient history and the evolution of human expression. However, because of their age, most of them remain difficult to recognize and understand today. Traditionally, the research to recognize and translate unknown Hieroglyphic characters is a manual process carried out by experts from the field of paleography. However, these ancient philologists face tremendous challenges. For example, there are currently, ten thousand Oracle bone pieces corresponding to 5,000 Oracle characters have been located, but only 1,500 Oracle characters have been identified.

The latest Artificial Intelligence techniques provide a range of potential solutions to accelerate the process of identifying unknown Hieroglyphic characters. The proposed research project aims to use these techniques as part of an innovative approach for supporting this endeavour. State-of-the-art deep learning and machine vision techniques will be harnessed and combined with natural language understanding techniques to generate a number of tools to support researchers in the identification and translation of ancient iconography. This project will focus on the recognition system, producing an initial prototype plus a normalised training dataset that can be used as a starting point for further work.

Further Reading:

[1] http://ieeexplore.ieee.org/document/7327196/?reload=true&arnumber=7327196

[2] http://hanziyuan.net/