Goshuin 2.0
—Construction of the World's Largest Goshuin Dataset and Automatic Generation of Goshuin with Neural Style Transfer—

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In this study, we use an informational science approach to solve the problem of the Goshuin(御朱印). The Goshuin is a vermilion stamped and inked text that can be obtained as a proof of visit to a shrine or temple.It has been in circulation mainly in Japan since the Middle Ages, and in recent years, the artistic quality of the Goshuin has been appreciated and is attracting attention.

However, it has received little attention in the academic field, and there are no examples of the Goshuin research, especially in the field of information science. Furthermore, there are no data sets that can be used for research, and even on the Web, there are only about 1,000 copies of the Goshuin at most. Moreover, the Goshuin is an intangible culture and may suddenly disappear. In addition, shrines and temples have a particularly low birthrate and an aging population, so the burden of writing the red seal is heavy. Therefore, we construct a dataset of about 3,000 copies of the Goshuin and build a web application that can automatically generate Goshuin using Neural Style Transfer to solve the above problems.

The dataset system allows users to view and download about 4,000 copies of the Goshuin (more than 1,000 copies collected by visiting shrines in each region, and about 3,000 copies given by the largest publisher of the Goshuin books). Users can also narrow down your search by denomination, region, shrine or temple, set, etc., or by name. This Dataset is available at https://seekgoshuin.herokuapp.com/

The automatic generation system is based on Style Transfer and Few-shot Learning, a kind of deep learning. Style Transfer is a technology that takes content images and style images as inputs and outputs images with the structure of the former and style of the latter. In other words, the system can output images that have both various existing Goshuin fonts and arbitrary text entered by the user. This System is available at https://digitalnaturegroup.github.io/DeepGoshuin/src/

These applications are expected to increase the interest of people not only in Japan but also in the world, to promote research on the Goshuin, and to make English-speaking people aware of the appeal of kanji and calligraphy. Furthermore, automatic generation of the Goshuin using Neural Style Transfer is expected to make it possible for writers to create Goshuin in a variety of calligraphic styles without much effort.

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