CRONOS-2024 AREA 2(PO:KAWAHARA)

R&D Project Title : Evolving Literal Communication Principal Investigator : Seiichi Uchida (Professor, ISEE-AIT, Kyushu University) Co-PI : Satoru Shioiri (Tohoku Univ.), Koichi Kise (Osaka Metro. Univ.) Shin-Ichiro Omachi (Tohoku Univ.), Keiji Yanai (Univ. Elec. Comm.), Masakazu Iwamura (Osaka Metro. Univ.), Kazuhiro Okada (Keio Univ.), Xinru Zhu (Tokyo Inst. Tech.)

Grand Challenge and Goal:

Exploring "New Forms and Functions of Characters and Texts for Humans in the AI Era" from Four Research Directions.

Summary:

• This research aims to exploring "new forms and functions of characters and texts for humans in the AI Era" from the following four research directions:

- Enrich characters by proposing novel character styles and representations.
- Secure characters and texts by embedding originator profiles or selecting trustable signatures
- Personalize characters for generating optimal character shapes and layouts for various observers, including dyslexia.
- Liberate characters by generating new alphabets for specific purposes.
- To address these challenges, we will develop new machine learning-based techniques, while collaborating with experts in psychology and linguistics, fields deeply connected to characters and texts, for a comprehensive approach

Social Impact:

- •The first three directions enable literal communication that meets the novel demands, such as diversity, safety, inclusion, and personalization
- •The last direction establishes a methodology for generating alphabets (i.e., a set of letters) based on mathematical optimization approaches for specific users

History of literal communication





