

Computational Detection and Evaluation of Citrakāvya



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The Indian literary tradition is a veritable treasure-house of various gems. One among them is citrakāvya. The term 'citrakāvya' comprises two words 'citra' and 'kāvyā'. 'Citra' connotes figure or wonder and 'kāvyā' means poetry. So citrakāvya is a special kind of poetry that inspires awe with unusual usage of letters and representation of forms or patterns through poetry. Citrakāvya is usually employed in devatāstuti (devotional verse), khaṇḍakāvya (short narrative poem) and raṇavarṇana (description of war). Citrakāvya is a demonstration of the scholarship and prowess of a poet.

Scholarly poets like Dandi, Bharavi, Bhatti, Kumaradasa, Magha, Ratnakara, Shivaswami, Harichandra, Jināsenacharya, Kaviraja, and Sriharsha have composed Citrakāvya in Sanskrit. Sanskrit poeticians including Dandi, Bhamaha, Vamana, Rudrata and Bhoja have discussed citrakāvya in their works. Citrakāvya is of various types like varṇacitra, śleṣacitra, gūḍhacitra, prahelikā, gaticitra, and bandhacitra. In addition to Sanskrit, Citrakāvya is found in several other Indian languages including Kannada, Telugu and Tamil.

Computational approach for identification and classification of citrakāvya is an emerging field. We develop a computational tool based on the Python programming language to identify one of the types of citrakāvya called varṇacitra in a Sanskrit or Kannada pādyā. In varṇacitra, there are various kinds of limitations on the usage of letters of the alphabet bringing about an aural charm in poetry. Depending on whether the constrained letters are vowels or consonants, varṇacitra is classified as svaracitra and vyañjanacitra respectively.

Detection of Varṇacitra

स्वागतम्।

श्लोकः सरस्वति प्रसादं मे स्थितिं चितसरस्वति। सर स्वति कुरु क्षेत्रकुरुक्षेत्रसरस्वति ॥

वर्णचित्र

प्रतिव्यञ्जनविन्यस्तस्वर

Fig 1: Screenshot of our tool detecting varṇacitra

One more kind based on the place of articulation of the constrained letter is called sthānacitra. Totally, there are about thirty-four kinds of varṇacitra-s described in Sanskrit poetics. Our tool is not only capable of identifying varṇacitra-s, but also evaluating the conformity / non-conformity of an input pādyā to all the available varṇacitra-s and showing the result using visual techniques.

Our work is one of the first attempts to automatically detect the presence of citrakāvya in a Sanskrit or Kannada pādyā and also classify them. In the upcoming stages, we plan to extend our work to cover other types of citrakāvya like gaticitra and bandhacitra. We expect our tool to be useful in composition of poetry, analysis of poetry, evaluation of poetry and in avadhānaṃ.

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Svaracitra evaluation

Input: क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||

Hrasvaikasvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Dirghaikasvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Hrasvadvisvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Dirghadvisvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Hrasvatrisvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Catuhsvara-dirghasvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Prativyañjanavinyastasvara

क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवुः स्वमरिकुलं युधि कुरवः ||.

Fig 2: Screenshot of our tool evaluating svaracitra