Computational Detection and Evaluation of Citrakavya



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The Indian literary tradition is a veritable treasurehouse of various gems. One among them is citrakāvya. The term 'citrakāvya' comprises two words 'citra' and 'kāvya'. 'Citra' connotes figure or wonder and 'kāvya' 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), khandakāvya (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, Kumaradasa, Magha, Ratnakara, Shivaswami, Harichandra, Jinasenacharya, 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 varnacitra, ślesacitra, gūdhacitra, prahelikā, gaticitra, and bandhacitra. In addition to Sansrit, 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 varņacitra in a Sanskrit or Kannada padya. In varņacitra, 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, varnacitra is classified as svaracitra and vyañjanacitra respectively.

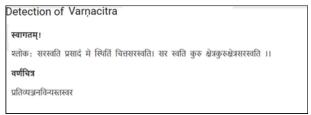


Fig 1: Screenshot of our tool detecting varnacitra

One more kind based on the place of articulation of the constrained letter is called sthanacitra. Totally, there are about thirty-four kinds of varnacitra-s described in Sanskrit poetics. Our tool is not only capable of identifying varnacitra-s, but also evaluating the conformity / non-conformity of an input padya to all the available varnacitra-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 padya 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 avadhanam.

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Svaracitra evaluation
Input: क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः | उरु रुरुधुर्गुरु दुधुवः स्वमरिकुलं युधि कुरवः ||
क्षितिविजितिविहिति। व्रतरतयः परगतयः । उर् रुर्थर्ग्रर् द्र्ध्वर्ः स्वमरिक्लं य्धि क्रवः ।।
Dīrghaikasvara
<u>क्षितिविजितिक्षितिविविहितिति व्रतरतयः परगतयः । उर् र्रुयुर्ग्र, दुधुवुः स्वमरिक्लं युधि क्रवः ।।</u>
Hrasvadvisvara
<mark>क्षिितििविजितििक्षितिविविहिति</mark>ि व्रतस्तयः परगतयः । उरु रुरुधुर्गुरु दुधुद्यः स्वमर<mark>िकुलं युधि कुरवः ।।</mark>
Dīrghadvisvara
क्षितिविजितिक्षितिविविहितिति वरतरतयः परगतयः । उर् र्र्थ्रर्ग्र दुध्वः सवमरिक्लं युधि क्रवः ।।
Hrasvatrisvara
क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः । उरु रुरुधुर्गुरु दुधुवः स्वमरिकुलं युधि कुरवः ।।
Catuhsvara-dirghasvara
क्षितिविजितिक्षितिविहिति व्रतरतयः परगतयः । उरू र<sub>ू</sub>र्ध्रग्रूरः दुध्वः स्वमरिक्लं युधि क्रवः ।।
Prativyañjanavinyastasvara
क्षितिविजितिक्षितिविहितिं व्रतरतयः परगतयः 📗 उरु रुरुधुर्गुरु दुधुवः स्वमरिकुलं युधि करवः 📙
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Fig 2: Screenshot of our tool evaluating svaracitra