



# Jñānaṅgrahaḥ

Collection of Applications Related to Sanskrit

Hrishikesh Terdalkar

Advisor: Prof. Arnab Bhattacharya

Department of Computer Science and Engineering  
IIT Kanpur



# Jñānasaṅgrahaḥ

- **Varṇajñānam** (वर्णज्ञानम्), a collection of utility functions related to Sanskrit alphabet.
- **Chandojñānam** (छन्दोज्ञानम्), a Sanskrit prosodical meter identification system.
- **Saṅkhyāpaddhatiḥ** (सङ्ख्यापद्धतिः), a collection of ancient Indian alpha-syllabic numeral systems.
  - **Kaṭapayādi Saṅkhyā**, a Kaṭapayādi encoding-decoding system.
  - **Āryabhaṭīya Saṅkhyā**, an Āryabhaṭīya encoding-decoding system.
  - **Bhūtasāṅkhyā**, a Bhūtasāṅkhyā encoding-decoding system.



# Varṇajñānam (वर्णज्ञानम्)

- **Pratyāhāra**
  - Short notation used by Pāṇini to refer to a collection of alphabets.
  - Form and Resolve Pratyāhāra.
- **Varṇa Viccheda**
  - Split a word into its component Varṇa.
- **Uccāraṇa**
  - Display uccāraṇa information of Varṇa.
- **Frequency calculator**



# Chandojñānam (छन्दोज्ञानम्)

- Most of Sanskrit literature is in the form of poetry.
  - Rules of Sanskrit Prosody
- Every akṣara (syllable) of a verse is identified as laghu (short) or guru (long)
- Every line of Sanskrit text → a binary sequence of laghu and guru markers
  - Specific patterns of such sequences are identified as various chandas.
- System to identify Chanda from Sanskrit text
  - Propose corrections



# Saṅkhyāpaddhatiḥ (सङ्ख्यापद्धतिः)

- Alpha-Syllabic Numeral Systems

Denote numbers using specific letters from the alphabet, syllables or words

1. Kaṭapayādi Saṅkhyā
2. Āryabhaṭīya Saṅkhyā
3. Bhūtasāṅkhyā

- Encoding and Decoding System

- Number → Text
- Text → Number

---

## Technologies Used



<https://sanskrit.iitk.ac.in/jnanasangraha/>



**Thank you!**