

New Research on Pitch Estimation of Bodo Mono-Syllabic Words



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A scholar in northeast India has come up with a pioneer study on pitch estimation of a local language spoken on the basis of tones.

Dr. Uzzal Sharma, Asst. Prof. Dept of Computer Science Engineering and Information Technology made a presentation on "Pitch Estimation of Bodo Mono-Syllabic Words" at the weekly Friday Lectures held at AssamDonBoscoUniversity featuring faculty and research scholars.

The language belongs to the branch of Barish section under Baric division of the Tibeto-Burman language and spoken by the Bodo people of north-eastern India and some parts of Nepal.

Bodo language, a branch of the [Tibeto-Burman](#) language family, is a language of the Bodo group under the Assam-Burmese group of languages. It is closely related to the [Dimasa language](#) of [Assam](#), the [Garo language](#) of [Meghalaya](#) and also related to the language of [Kokborok language](#) spoken in [Tripura](#).

The word Bodo denotes the language and the community and it is pronounced with a high tone on the second syllable.

One of the 22 scheduled languages that is given special constitutional status in India, Bodo language has two very clearly distinguishable kinds of tone: low and high.

As a common system, the low tone is marked by an **acute accent(´)** and the high tone by a **grave accent (`)** over the vowels of the syllable where the particular tone occurs.

Tone, in linguistics (a variation in the pitch of the voice while speaking) is used to differentiate one word from another that is otherwise identical in its sequence of consonants and vowels.

In Bodo language, pitch is a property of words, but what is important is not absolute pitch but relative pitch.

“The domain of the tones is usually the syllable. That is why it is very much important to study the tone associated with the syllable,” says Mr Sharma who for the first time is attempting to study and estimate the pitch associated with the Bodo mono-syllabic words.

For the current study, Mr Sharma used Average Magnitude Difference Function (AMDF) which is real time application measuring the periodicity of voiced speech.

Pitch detection can aid in the study of the prosody of any language. It is the tone of the vowel within a word that distinguishes the word lexically and contains speaker-specific information-which may help in the design of speech based Biometric system.

Mr Sharma added, “the observations were very interesting and will be hugely applicable in the Development of TTS (Text To Speech) system.”

The Bodo speaking areas of [Assam](#) at present stretch from [Dhubri](#) in the west to [Sadiya](#) in the east.

In [Jalpaiguri](#) and other adjacent districts of Bengal, the Bodos are known as "Mech".

The population of Bodo speakers according to 1991 census report was 1,184,569.

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