

CMMA Monthly Seminar

第 20 回 CMMA 月例セミナー

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Music is great fun. Even greater fun is music processing research. There are various interesting topics and issues waiting to be solved in the music processing area that this talk will address. Being time series information like speech and language, music is a good (or even better) target for sophisticated models and algorithms developed in the field of spoken language processing, although the focus lies on fundamental frequencies in contrast to the spectrum envelope in the case of speech recognition. Therefore, a significant extension of features and models is often required instead of simple adoption of existing tools. In analogy to spoken language, music processing is three-fold at least: music signal corresponding to speech signal, music performance corresponding to pronunciation/prosody and music score corresponding to text. There exist automatic generation/synthesis, decomposition, manipulation/modification and analysis issues within each of these three domains as well as conversion/recognition and rendering/synthesis issues between them.

Signal processing issues include automatic music transcription (as the inverse problem of playing music to a score) and its partial problem, multi-pitch analysis for polyphonic music, sound, tempo and note value identification, rhythm analysis/recognition, music genre classification, musical instrument identification, score following/alignment and note onset detection. There are also numerous non-signal (i.e., symbolic) information processing issues such as automatic music composition, arrangement, accompaniment, piano/guitar fingering decision, music rendering from score and an automated jazz session. Among these issues are many inverse problems where probabilistic models and statistical inference are quite helpful.

The entire area of music processing looks as vast as that of speech/language processing. In this talk, some examples of approaches to these scientific issues are introduced along with interesting results.

"Stochastic Inverse Problems in Music Processing"

日時：2017 年 10 月 23 日 (月) 16:30-17:30

場所：明治大学 中野キャンパス高層棟 6 階 研究セミナー室 3

主催：

文部科学省 共同利用・共同研究拠点
明治大学先端数理科学インスティテュート
現象数理学研究拠点 (CMMA)



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