

2020年1月14日

## 博士後期課程研究発表会(公開)のお知らせ

大学院理工学研究科 博士後期課程 数理電子情報コース 沓澤京(指導教員: 辻 俊明 准教授)の博士後期課程研究発表会を下記のとおり開催いたします。

日時: 2020年1月22日(水) 14:40~16:10

場所: 総合研究棟 2階 12番教室

表題: Learning of Motion Generation for Various Situations based on Sequence-to-Sequence Model

概要: Robots are expected to extend their applications to our general daily tasks such as cooking, cleaning, and other humans' works. In such tasks, the robots require motion generators that generate commands based on their situations. Here, the motion generators should receive not only the current state but also orders that are given externally (e.g., users' priority, limitations, and target positions). Considering the diversity of situations in our daily lives, such external orders are diverse in both contents and representations. In this dissertation, an issue of how the motion generators can handle various external orders was taken.

To handle diverse external orders, motion generation via latent representations of trajectories is expected to be effective; this approach can make the motion generators not dependent on the representations of the external orders directly. To realize such motion generators, encoder-decoder neural networks for time-series, also known as sequence-to-sequence (seq2seq) models, are preferable.

However, there are several issues on the use of seq2seq models for motion generation to be solved; 1) training methods of diverse trajectories to seq2seq models, 2) association methods of external orders to latent representations, and 3) robustness of the trained seq2seq models as well as motion generators. Firstly, training methods to allow the seq2seq models to learn diverse motions are proposed. Secondly, association methods between the obtained latent representations and external orders are proposed. Thirdly, it is confirmed that the trained models are robust against fluctuations in the environment.

以上

理工学研究科 博士後期課程 沓澤京