

CS Seminar

Learning Neural Character Controllers from Motion Capture Data

Prof Taku Komura

**Institute of Perception, Action and Behaviour
School of Informatics, University of Edinburgh**

Date:

December 16, 2019

Monday

10:00 am

Venue:

Room 308

Chow Yei Ching Building

The University of Hong Kong

Abstract:

In this talk, I will cover our recent development of neural network-based character controllers. Using neural networks for character controllers significantly increases the scalability of the system - the controller can be trained with a large amount of motion capture data while the run-time memory can be kept low. As a result, such controllers are suitable for real-time applications such as computer games and virtual reality systems. The main challenge is in designing an architecture that can produce movements in production-quality and also manage a wide variation of motion classes. Our development covers low-level locomotion controllers for bipeds and quadrupeds, which allow the characters to walk, run, side-step and climb over uneven terrain, as well as a high level character controller for humanoid characters to interact with objects and the environment, which allows the character to sit on chairs, open doors and carry objects. In the end of the talk, I will discuss about the open problems and future directions of character animation.

About the Speaker:

Taku Komura is a Professor at the Institute of Perception, Action and Behaviour, School of Informatics, University of Edinburgh. As the leader of the Computer Graphics and Visualization Unit his research has focused on data-driven character animation, physically-based character animation, crowd simulation, cloth animation, anatomy-based modelling, and robotics. Recently, his main research interests have been the application of machine learning techniques for animation synthesis. He received the Royal Society Industry Fellowship (2014) and the Google AR/VR Research Award (2017).

All are welcome!

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