Gaussian Process Inference Modelling of Dynamic Robot Control for Expressive Piano Playing

Demonstration Videos

Demonstration videos linked in the project summary report would have been shown during the outreach activity to better illustrate how the robot eventually learns to play accurately.

Music Entertainment

We planned to set up the robot and digital piano at the outreach event, and would program the robot to play a popular tune in the background to attract attention to the booth.

Interactive Session

To engage students visiting the booth and curious to know more, we could have set up an interactive program where a student can play any tune on the piano that is within the capabilities of the robot, and program the robot to immediately reproduce the tune, with the exact musical expressions, based on its prior training. This would have facilitated the illustration of how the robot is able to reproduce tunes and more easily explain technical details such as Gaussian process regression techniques which may be foreign to the students.

Informative Sheet

Printouts of the project summary, or if necessary, a scientific poster (that has already been drafted previously for a conference) could have been available at the outreach for students interested to read up on the project.

Scientific Journal

A scientific research paper based on this project, with the same title, has already been submitted to the PLOS ONE scientific journal and is currently awaiting reviews. This is co-authored by Luca Scimeca, Cheryn Ng and Fumiya Iida under the Bio-Inspired Robotics Laboratory, Cambridge University Engineering Department.