

(For JSPS Fellow)

Form B-5

Date (日付)

2013/09/26

(Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Thomas Nierhoff (ID No. P13501)

- Participating school (学校名): Utsunomiya Girl's High School

- Date (実施日時): 2013/09/26 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Robotic Billiards

(in Japanese) ロボとビリヤード

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Robotic systems play an increasingly important role in entertainment. Prominent examples include Sony's Aibo and RoboCup, a robotic soccer challenge with the ultimate goal of defeating the human soccer world cup champions by 2050. Another game is billiards. Given today's technology, is it possible to build an anthropomorphic billiards robot that is capable of winning against a human opponent?

In this several challenges are discussed that have to be overcome in order to build a decent billiards robot. Starting with the mechanical setup and basic robotic principles that enable the robot to move in a reasonable manner, the general setup and the visual system is explained in detail. Subsequently the focus shifts to how a pool simulator enables the robot plan ahead for a better game play. Basic planning principles (search tree, sampling based planning) are presented and discussed. In order to improve its skill autonomously and to anticipate the opponent's game style as more and more games are played, general artificial intelligence methods are superficially introduced. Some examples were given what is currently state of the art in artificial intelligence and why it is a hot and interesting topic. The talk was aimed at motivating the pupils for science and to show the different aspect robotics in detail consists of

- Language used (使用言語): English

- Lecture format (講演形式): powerpoint presentation

◆Lecture time (講演時間) 55 min (分), Q&A time (質疑応答時間) 5 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

used projector

- ◆ Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Accompanied by an English teacher from the local high school, who helped translating difficult vocabularies and complex topics

- ◆ Name and title of accompanied person (同行者 職・氏名)

Can't remember, the person in charge was Atsuko Hotta but she went with another presenter

- ◆ Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):