

(For JSPS Fellow)

Form B-5

Date (日付)

18/05/15 (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): Ali Motamedi (ID No. P14368)

- Participating school (学校名): Aichi Prefectural Nishio Senior High School

- Date (実施日時): 08/05/15 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Where am I? Where is my stuff? (The question of Localization)

(in Japanese) 位置推定技術入門

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

Abstract:

We try to solve the localization problem many times a day. Every time we use the GPS of our smart phones, we use a tool to help us resolving the localization problem. GPS helps us finding our location in the city. In addition, the navigation tools (Such as Google Maps) helps us finding the best route to our destination. Before the widespread use of GPS, people used landmarks, maps, and signs in order to help them finding out their location. The use of maps is still very popular and there are city-maps available in public areas.

With the help of GPS, finding our location is easy when we are outdoors. However, GPS does not work accurately inside buildings or in places that are surrounded by large buildings and towers. The problem of finding our location inside buildings has not been fully solved yet. Using maps and signage is still the main method to find the location inside buildings (For example in the shopping malls or subway stations). Although many techniques have been introduced by researchers, none of them has become a widespread standard.

We also try to find the location of *our stuff* in our daily life (For Example: finding a book in a library, finding the key for your bicycle-lock in your room, finding a drill in a construction site, or finding your lost pet in the city). Every day we spend lots of time searching for things and GPS cannot help us for that.

In my research I am trying to solve the indoor localization problem. I am looking for methods to help us finding our location inside buildings and also finding the location of things we are searching for. In my lecture, I briefly talk about how location information is presented and how GPS technology works. I will also explain about Radio Frequency Identification (RFID) technology. RFID is the technology that I used

in my research in order to solve the localization problem. Finally I show a video that demonstrates the application of my research in a real building. The lecture also starts with an introduction about my personal background, the countries I lived in, and my life as a researcher in Japan.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 42 min (分), Q&A time (質疑応答時間) 10 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))

Projected Presentation, Distributed sample hardware used in the research, Showed video recordings of the experiments

◆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))

Assistance by accompanied person

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

Dr. Takashi Michikawa (Assistant professor at Osaka University)

◆Other noteworthy 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。):

若手研究者の研究内容に触れられるという点において、大学進学を控えた高校生にとっては有意義な時間であったと思います。(大阪大学 道川)