

ICRA2013 IN GERMANY



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海外論文発表

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Towards High-Speed Automated Micromanipulation

Key Words : Micro and Nanoscale Automation,
Computer Vision for Robotics and Automation, Fast micromanipulation

Name of the Conference: 2013 IEEE International Conference on Robotics and Automation (ICRA 2013).
Venue: Karlsruhe, Germany.
Date: 6-10 May, 2013.
Title of the Paper: Towards High-Speed Automated Micromanipulation.

In May 2013, I joined one of the top robotics conference (ICRA 2013). The conference venue was Karlsruhe, Germany.

On 6th of May, it was the first day of the conference and I joined a workshop called “Hyper Bio Assembler for 3D Cellular System Innovation” and learnt about bioassembly by utilizing robotic approach. Basically the aim was realizing 3D functional cellular structure which is related with my own study.

On the 7th of May (Tuesday), Conference started with a very significant plenary talk of Robert Wood who belongs to Harvard University. The speech was about insect-scale robotics, particularly challenges of successful flight. The challenges were about microrobotics and it was very good opportunity for me to listen some important topics related with mine.

When it was late afternoon, it was time for me to do presentation of my study which has a title “Towards High-Speed Automated Micromanipulation”.

Although high speed manipulation in macro-scale has been realized by industrial robots successfully, it is still difficult to achieve same goal in micro-scale. I talked about challenges of the micro-size object handling through contact manipulation. I received some valuable questions and comments from audiences. Some of the audience asked questions to understand the way we control the our microhand system. Some researchers commented that if we can realize a different structure of the end effector, we could achieve high success rate of manipulation task. It was important to have discussion after the presentation.

On 8th and 9th of May, I joined the conference to see other related works of the researchers.

On 10th of May (Friday), I joined the last day of the conference which was mainly workshops. The one got my attention was “Microassembly: Robotics and Beyond”. I listened very informative talk of experts in the field and did a small presentation about my work again.



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Figure 1. Entrance of the Conference Venue



Figure 2. During the conference



Figure 3. In front of a museum in Karlsruhe