

# Opportunities for research collaboration with Hosei University (Japan)



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**LECTURE SERIES**

## Abstract

Engineering education of the past responded to “manufacturing” with an emphasis on function. As a result, compartmentalisation of the fields of education and research in engineering has progressed and a certain level of results has been achieved in each field. On the other hand, it is true that the traditional study system, which was vertically compartmentalised depending on subjects, was not capable of handling such fields as the automotive or IT industries, where comprehensive knowledge and technologies of machinery, electricity, information, management and others are required. In the Faculty of Science and Engineering of the Hosei University in Japan, which makes a new start from the academic year of 2008, students study subjects across departments according to their concerns and needs. The aim is to foster generalist engineers with broader knowledge and technologies while possessing solid basic knowledge of science and engineering.

In the first presentation, Prof. Kazuo Yana, Director of the Institute of Integrated Science and Technology (IIST), Faculty of Science and Engineering from Hosei University in Japan, will present the opportunities for research collaboration and students exchange.

Intelligent robots are one of the research fields at the Faculty of Science and Engineering. Intelligent robots must process multiple sensors data and adapt the policy as the environment changes. In the second talk, Prof. Genci Capi will introduce three different applications of intelligent robots:

- 1) **Recent findings on Brain Machine Interface**, especially using the rat’s signals for robot decision making and navigation. In this work, his research group focused on the most important cognitive process during navigation, the decision-making, which requires integration of many neural activities

across different brain regions.

- 2) **Intelligent robotic system to guide visually impaired people in urban environments.** The results of an experiment with the robot equipped with two laser range finders, global positioning system (GPS), camera, and compass sensors using different navigation algorithms enabling the robot to move autonomously in different urban environments will be presented.
- 3) **Assistive intelligent robots** in different environments will be presented including simulation and experimental results.

## Programme

<b>15.00:</b>	Opening	Prof. Tatiana Kováčiková, ERA Chair Holder, UNIZA
<b>15.10</b>	Introduction	Prof. Peter Brída, Vice-dean for Development and International Co-operation, Faculty of Electrical Engineering, UNIZA
<b>15.20</b>	Opportunities for research collaboration and student exchange between Hosei University and UNIZA	Prof. Kazuo Yana, IIST Director, Faculty of Science and Engineering, Hosei University
<b>15.50</b>	Research on Intelligent Robotic Systems at Hosei University	Prof. Genci Capi, Faculty of Science and Engineering, Hosei University
<b>16.20</b>	Discussion	
<b>17.30</b>	Closing	

