

Associate Prof. Kohtake, Assistant Prof. Makino, and students at G-Spatial EXPO

October 2010

Message from the Director and Dean

One doctoral student and nine master's students received their degrees in the SDM Commencement Ceremony held on September 14. Combined with the students who graduated this past March, a total of four doctoral students and 58 master's students earned degrees in the first graduating class. I hope each of them will apply what they've learned in SDM to their future career as leaders and creators of technological and social systems. I would like to express my gratitude for your support of SDM in its early years. Our efforts are bold and ambitious but we are confident that we will succeed with your continued support.

In other news, the Japan Science and Technology Agency (JST) released a report naming specific Centers of Excellence in the MEXT GCOE Program. In the Systems Science and Technology category, two of the three Centers of Excellence belong to Keio University. As awareness of the importance of systems science grows, several Japanese universities are establishing departments devoted to the study of systems science. We are inspired to further develop our educational and academic activities to maintain our leadership role.



Yoshiaki Ohkami
Director, SDM Research Institute
Dean, Graduate School of
System Design and Management

News

TOPIC

1

2nd SysML Forum

The 2nd SysML Forum co-hosted by Object Management Group (OMG), UML Technology Institute, SDM Research Institute, and Japan Chapter of INCOSE (International Council on Systems Engineering) was held on August 31 in the Collaboration Complex. The effectiveness of the model-based approach in the systems engineering process is widely known, and SysML (Systems Modeling Language) is expected to play a significant role as a common language in system development in multiple fields including mechanics, electronics, hardware, and software. Approximately 100 participants actively discussed various topics in the forum, including SysML's growth in Japan and the growing expectations for SysML in many industries, especially space and auto. OMG and UML Technology Institute presented the OCSMP program, their certification exam for system modeling engineers, and described its training courses. Prof. Hidekazu Nishimura from SDM announced that the Japanese edition of *A Practical Guide to SysML*, written by Morgan Kaufmann/Elsevier, will be published by Tokyo Denki University Press next year. Prof. Nishimura supervised the translation.

Link: OMG

▶ <http://www.omg.org/>

UML Technology Institute

▶ <http://www.umlcert.org/index.html>



Special Guest Prof. Laurent Balmelli, Manager of IBM's SysML Representative, presenting application of SysML



Prof. Ohkami introducing INCOSE Japan Chapter and its approach to SysML

TOPIC

2

Assistant Prof. Terumasa Narukawa commended by the Japan Society of Mechanical Engineers



SDM and GCOE Assistant Prof. Terumasa Narukawa won the Audience Award at the Dynamics and Design Conference 2009 (Best Presenter). The award was presented by the Dynamics, Measurement, and Control Division of The Japan Society of Mechanical Engineers.

TOPIC
3**Prof. Toshiyuki Yasui wins Best Paper Award, Japan Society of Competitive Intelligence**

Prof. Yasui receives award from Mr. Hashima, Board member

The Japan Society of Competitive Intelligence awarded Prof. Toshiyuki Yasui “2010 Best Paper Award” on September 18. The Society is the only organization in Japan that researches the application of intelligence in business competitiveness (CI). Prof. Yasui won this award for “Introduction of Competitive Intelligence to Professional Sports in Japan: Quantitative Assessment on Analytic Hierarchy Process (AHP) regarding Motives and Preferences”, which was featured in the 2010 edition of “Intelligence Management,” the Society’s journal. In the ceremony, Mr. Tetsuo Kashima, board member, praised the paper for its novelty of applying CI in profes-



Prof. Yasui with Mr. Yoshio Sugawara, President of the Society

sional sports, the effectiveness of application in other industries, and the objectiveness of applying quantitative engineering methods, including AHP.

TOPIC
4**Commencement Ceremony**

Commencement Ceremony

The SDM Commencement Ceremony for 2010 September class was held on September 17 on Mita Campus. One doctoral student (system engineering) and nine master’s students (three in system engineering and six in system design and



Award winners with professors and SDM staff

management) were awarded degrees. Soichiro Takamine won the Best Performance award, and four students in the master’s program won Outstanding Achievement awards.

TOPIC
5**Entrance Ceremony**

Entrance Ceremony

The Entrance Ceremony was held on September 22 on Mita Campus. Ten new students enrolled at SDM this fall. Five are in the doctoral program and five are in the master’s program.

TOPIC
6**The 4th workshop of SDM 2010 Design Project ALPS**

The 4th workshop of 2010 Design Project ALPS, a course sponsored by Norinchukin Bank, was held on September 24 and 25. As in the past, the workshop featured presentations by students and lectures by faculty members. Seventeen student groups gave PowerPoint presentations on themes related to “safe and secured system design”. As each student spoke, a demonstration of his or her prototype was projected onto a large screen in Prototype Extravaganza style, which greatly enhanced the

audience’s understanding of how the design would actually work.

Prof. Kurt Beiter from Stanford University gave a lecture titled “Scorecarding, Design for Variety.” Prof. Oliver de Weck from MIT gave a lecture titled “Robust Design, Design of Experiments” from Boston via the video conference system. In the lecture, Keio students flew paper planes to assess the impact of various design parameters on flight performance. The statistical results will be reported later.

SDM Assistant Prof. Nobuaki Minato gave a lecture titled “Business Model Design and Evaluation, Financial Evaluation, Pricing” and presented ideas from the last three workshops as well as their possible adaptation to business.



ALPS lecture



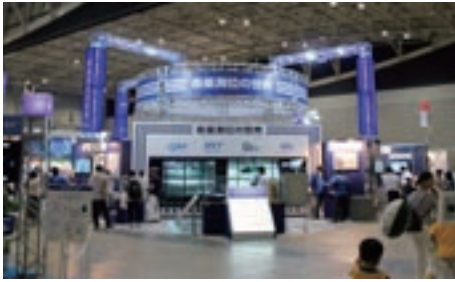
Presentation by a student group



Students assessing flight performance

TOPIC
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SDM Research Achievement presented in G-Spatial EXPO



G-Spatial EXPO

The G-Spatial EXPO was held at Pacifico Yokohama from September 19-21. The EXPO, under the theme of “location information and mapping” featured a wide range of topics including satellite positioning, GIS, ITS, disaster prevention, and architecture. SDM professors

presented three research projects. Associate Prof. Naohiko Kohtake of SDM’s Aerospace Intelligent Systems Lab displayed an integrated platform that provides various location information services. As an example, a service to navigate shoppers to certain shops and then to certain shelves based on their shopping lists was demonstrated jointly with Information Services International-Dentsu, Ltd. A social networking game using location information proposed by GNSS Technologies Inc. and created by Team 13 of ALPS 2010 was also played. At the 5th Geo Media Summit held concurrently with the EXPO, Prof. Haruyama’s Ubiquitous Communication Laboratory presented a location information system utilizing visible light communication. More than 36,000 people visited the EXPO over three days.



Presentation of visible light communication in GMS

Link:

G-Spatial EXPO

▶ <http://www.g-expo.jp/>

G-Spatial EXPO article featured in InternetWatch website

▶ http://internet.watch.impress.co.jp/docs/column/chizu/20100930_396973.html

Geo Media Summit website

▶ <http://geomediasummit.jp/>TOPIC
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Aria Iwasawa (M1), the first Asian to present in Plenary Session “Next Generation Vision for Space Operations” in IAC



Ms. Iwasawa giving a speech (image taken from YouTube)
Ms. Iwasawa speaking in the discussion (image taken from YouTube)

The 61st International Astronautical Congress (IAC) hosted by the International Astronautical Federation was held in Prague, Czech Republic from September 27- October 1. Aria Iwasawa, a first-year Master student in the Aerospace Intelligent Systems Lab, was one of five young

engineers and scientists selected in an international competition to join the panel discussion in the plenary session “Next Generation Vision for Space Operations” for young engineers and scientists in the space exploration field.

The selection exam was held in several stages. The finalists made a three-minute video in which they replied to the several questions posed by the

selection committee. Ms. Iwasawa, the first Asian to be selected, gave a speech and participated in a discussion and Q&A session with the other four panelists on space operations. Ms. Iwasawa has also been selected as a student participant in JAXA’s program and joined the student program hosted by the International Space Education Board to present her space-related research for her master thesis.

Link:

IAC 2010 website

▶ <http://www.iafastro.com/index.html?title=IAC2010>

JAXA’s program to dispatch students to IAC 2010

▶ <http://edu.jaxa.jp/join/20100305.html>

IAC 2010 Plenary5 “Next Generation Visions for Space Operation” website

▶ http://www.iafastro.com/index.html?title=IAC2010_Plenary_5TOPIC
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Keigo Kakikura (M2) wins Excellent Poster Award in Microgravity Science Symposium



Mr. Keigo Kakikura

Keigo Kakikura, a 2nd year master’s student at SDM, won the Excellent Poster Award in the 8th Japan, China, and South Korea Microgravity Science Symposium held in Sendai on September 22-24. He presented a paper titled “Analysis

of transient behavior of ambient gas flow in measuring the thermophysical property of high temperature melts using parabolic flight” in the Mohri Poster Session of the symposium. Astronaut Dr. Mamoru Mohri presented the Certificate of Commendation to him.

TOPIC
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Hiroaki Murase (D2) et al. wins Best Paper Award in the Japan Association of Regional Development and Vitalization



From left, Mr. Hiroaki Murase (D1), Prof. Takashi Maeno, Prof. Mikako Hayashi

The paper titled “A Study of CSA (Community Supported Agriculture) Regarding Regional Development-A Case Study of Menno Village Naganuma’s Activity” was selected as the Best Paper and will be presented in Regional Revitaliza-

tion Forum in National Lifelong Learning Forum held on November 22 in Kochi Prefecture. The paper, authored by Prof. Takashi Maeno, Prof. Mikako Hayashi, and Hiroaki Murase (D2) was featured in Chiiki Kassei Kenkyu, the collection of papers published by the Japan Association of Regional Development and Vitalization. Community Supported Agriculture (CSA) is increasingly common in western countries, but relatively rare in Japan. Murase et al. clarified the characteristics and proved the effectiveness of Japanese-style CSA based on their research of CSA farmers in Hokkaido and CSA system modeling. The award recognized the new perception of CSA as a system

useful for local revitalization. The research was partially underwritten by Norinchukin Bank.

Prof. Takashi Maeno, Prof. Mikako Hayashi, Hiroaki Murase, A Study of CSA (Community Supported Agriculture) Regarding Regional Development -A Case Study of Menno Village Naganuma’s Activity- Chiiki Kassei Kenkyu, Vol.1, March 2010.

Laboratory Profile

Agricultural Laboratory (Representatives of the lab: Prof. Mikako Hayashi and Prof. Takashi Maeno)

“Rural and urban symbiosis” is an important concept in the revitalization of rural areas. The Agricultural Laboratory was established to promote research, penetration, and education of local revitalization through “rural and urban symbiosis”. Prof. Takashi Maeno and Prof. Mikako Hayashi and others are involved in the activities.

▶ <http://www.sdm.keio.ac.jp/pdf/agrizemi.pdf>



At Nakano Farm



Prof. Takashi Maeno worked as a researcher at Canon, Inc. and became a visiting industrial fellow at the University of California, Berkeley, a visiting professor at Harvard University, and a professor at the Faculty of Science and Technology at Keio University. He has been a professor of the Graduate School of System Design and Management since 2008. His specialties are system design and management methodology, robotics, and science and technology studies.

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Special Research Prof. Mikako Hayashi is a television announcer and eco-life journalist. She worked as an announcer at Sapporo Television Broadcasting before becoming a freelance television journalist. At SDM, she is in charge of several courses including System Environment, Communications, and the Agriculture Seminar, which conducts research on agriculture and the environment from various perspectives. Her specialties are community building, rural and urban symbiosis, environment, and communication.

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1 Research on revitalization through rural-urban symbiosis



Prof. Hayashi conducts the monthly Agriculture Seminar on the Keio campus. Each participating master's, doctoral, or research student engages in research for the lab to which they are assigned at SDM as well as cross-sectional research in the Agri Lab. They visit farms in Hokkaido to conduct field research on topics such as “community supported agriculture,” “biomass energy,” “dietary education” and “plant factories.”

The Japan Association of Regional Development's Best Local Revitalization Award was presented to Mr. Hiroaki Murase (D2), Prof. Takashi Maeno and Prof. Mikako Hayashi for their paper titled “A Study of CSA (Community Supported Agriculture) Regarding Regional Development”. They will present the paper at the Regional Revitalization Forum in the National Lifelong Learning Forum held on November 22 in Kochi Prefecture.

2 Local revitalization forum using rural-urban symbiosis

The annual forum is hosted by SDM and Noutokyousei Kenkyukai, a civic group led by Prof. Hayashi that promotes rural-urban symbiosis.

This year the forum will be held in Tobetsu town, Hokkaido on November 13 with the theme of “Eco-friendly Agriculture, Rural and Urban Symbiosis”.

Link: Noutokyousei Kenkyukai website “Fielddays in Japan 2010 Eco-friendly Agriculture, Rural and Urban Symbiosis” website

▶ <http://www.noutokyousei.jp/> ▶ <http://fielddays08.blog39.fc2.com/>

3 Activities to promote rural-urban symbiosis

Prof. Hayashi writes the annual “Agri Lab Report”. She has also authored “Tips for rural-urban symbiosis” (Japanese title: Noutokyousei no Hinto) and “Let's visit farming villages” (Noson he Dekakeyo), both published by Jurosha.

Prof. Maeno and Prof. Hayashi appeared on “Agriculture Island”, a radio program aired by FM Hokkaido in September 2009 to introduce the activities of the Agriculture Laboratory and Agriculture Seminar.

Link: Agri Lab Report

▶ <http://www.sdm.keio.ac.jp/news/2010/03/25-093229.html>

Hokkaido Entertainment Portal Site “Mono Globe”

▶ <http://www.monoglobe.jp/blog/nogyo/>

4 Farming experience and research on Keio SDM's contract farm in Hokkaido

The annual Hokkaido farm visit, in which laboratory members experienced farming and interviewed at SDM's contract farm, Nakano Farm (Takikawa City) and Mitamura Noen (Yuni town) was made in September. Both farms provided detailed data, including past agricultural production and farming instructions for non-farmers, which are helpful in our research.

The Agriculture Laboratory and Agriculture seminar are open to anyone interested in “rural - urban symbiosis” and “the future of agriculture and farming communities”.



At SDM's contract farm, Mitamura Noen



Students watching rape oil press



Students farming



Students listening to instructions at Mitamura Noen



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