

12th Conference on Field and Service Robotics

FSR 2019

Shibaura Institute of Technology
Tokyo, Japan, August 29-31

Conference Digest

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**NIHON
BINARY**

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Atsushi Oosedo			

Program at a glance

August 29th 2019

Time	Activity
09:00-09:15	Opening Remarks
09:15-09:20	Short Break
09:20-10:20	Keynote #1 (Prof. Sanjiv Singh)
10:20-10:40	Coffee Break
10:40-12:00	Session #1 Ground Vehicles
12:00-13:00	Lunch (Foyer)
13:00-14:20	Session #2 Service and Transportation
14:20-14:40	Coffee Break
14:40-16:00	Session #3 Agriculture & Forest 1
16:00-16:20	Coffee Break
16:20-17:40	Session #4 Agriculture & Forest 2
17:40-19:10	Light Dinner (Foyer)

August 30th 2019

Time	Activity
09:00-10:20	Session #5 Space Robotics
10:20-10:40	Coffee Break
10:40-12:00	Session #6 Aquatic robotics 1
12:00-13:00	Lunch (Foyer)
13:00-14:00	Keynote #2 (Prof. Yoshiyuki Sankai)
14:00-14:20	Coffee Break
14:20-15:00	Session #7 Aquatic robotics 2
15:00-15:30	Move to Technical Tour
15:30-17:10	Technical Tour
17:10-17:30	Move to Banquet
17:30-20:00	Banquet (Traditional Japanese Boat Cruise)

August 31st 2019

Time	Activity
09:00-10:40	Session #8 Aerial Robotics and UAVs 1
10:40-11:00	Coffee Break
11:00-12:00	Keynote #3 (Prof. Davide Scaramuzza)
12:00-13:40	Lunch (Off-campus)
13:40-14:40	Session #9 Aerial Robotics and UAVs 2
14:40-15:00	Coffee Break
15:00-16:20	Session #10 Construction & Inspection
16:20-16:30	Short Break
16:30-16:50	Closing
16:50-17:30	Break & Move to Farewell Dinner
17:30-19:30	Farewell Dinner (Cafe Haus)



<https://easychair.org/smart-program/FSR2019/index.html>

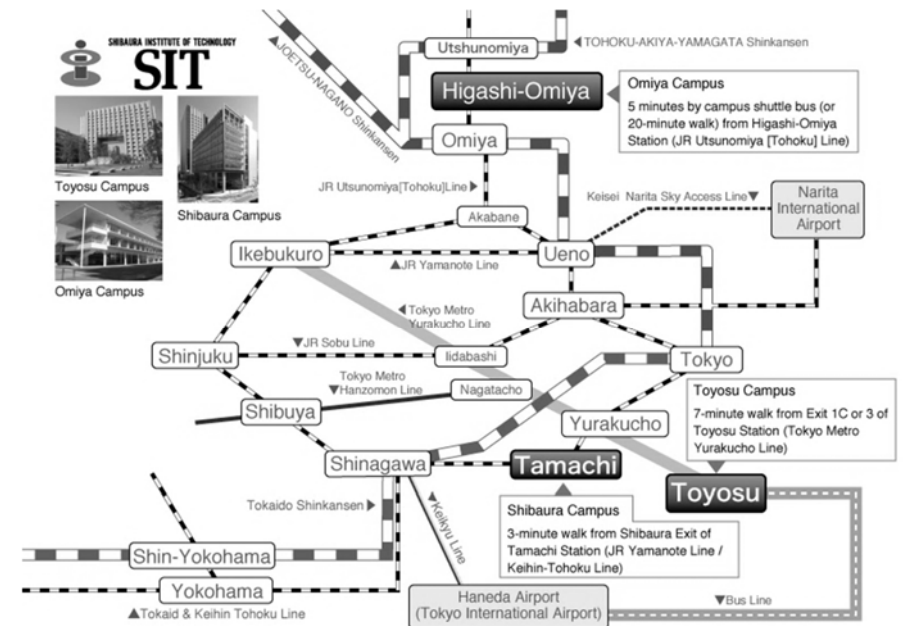
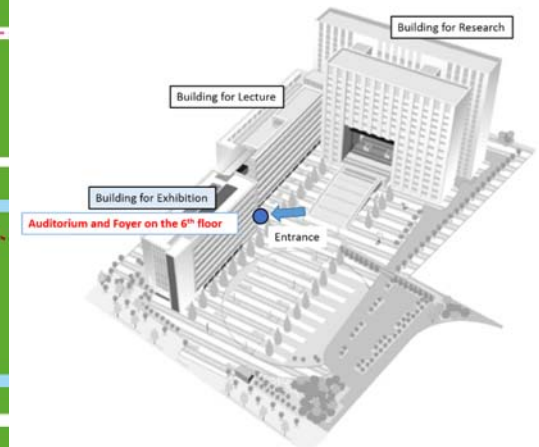
Venue

The conference will be hosted on the Toyosu Campus of Shibaura Institute of Technology in Tokyo.

- Registration: Foyer on 6th floor
- Cloak: Foyer on 6th floor
- Keynotes and Presentations: Auditorium on 6th floor
- Company Exhibitions: Foyer on the 6th floor

Address : 3-7-5 Toyosu, Koto-ku, Tokyo 135-8548

- Tokyo Metro Yurakucho Line, Toyosu Station - 7-minute walk from exit 1C or 3
- YURIKAMOME Line, Toyosu Station - 9-minute walk from Toyosu Station
- JR Keiyo Line, Ecchujima Station - 15-minute walk from exit 2



Keynotes

#1: Field Robotics: Ready Now for Dull, Dirty and Dangerous? (Aug. 29th)

SANJIV SINGH

Research Professor of The Robotics Institute, Carnegie Mellon University
CEO of Near Earth Autonomy



Biography

Dr. Sanjiv Singh is an educator, innovator, and entrepreneur. He is currently a Research Professor at the Robotics Institute, Carnegie Mellon University and the CEO of Near Earth Autonomy, a startup that develops autonomy for next generation aircraft that will inspect infrastructure, deliver cargo, and, transport people.

He started his career working on the earliest autonomous ground vehicles to operate outdoors in 1985. Since then, he has led research efforts with applications in aviation, agriculture, mining and construction. In 2010 he led a team that demonstrated the first autonomous, full-scale helicopter capable of take off, search for viable landing sites and safe descent. In 2011 he led the autonomy effort for Transformer, DARPA's flying car program. He is the founding editor of the Journal of Field Robotics and a co-founder of 4 companies.

#2: Challenges for Social Implementation of Innovative Cybernic Systems - Fusion of Humans, Robots and Information Systems- (Aug. 30th)

YOSHIYUKI SANKAI

Professor and Executive Research Director at the Center for Cybernics Research, University of Tsukuba
President and CEO of CYBERDYNE Inc.



Biography

Yoshiyuki Sankai received a PhD in engineering from University of Tsukuba in Japan in 1987. He was Assistant Professor, Associate Professor, Professor at University of Tsukuba, and a Visiting Professor of Baylor College of Medicine in Houston, Texas in the United States. Currently, he is professor of Faculty of Engineering, Information and Systems, Executive Research Director at the Center for Cybernics Research, University of Tsukuba and president /CEO of CYBERDYNE Inc. He is a fellow of the Robotics Society of Japan and the Society of Instrument and Control Engineers. He is also a Center Partner of the Center for the Fourth Industrial Revolution and a member of Global Future Council of Production of World Economic Forum.

#3: Are We Ready for Autonomous Drones? (Aug. 31st)

DAVIDE SCARAMUZZA

Professor of Robotics and Perception at both departments of Informatics (University of Zurich)
and Neuroinformatics (University of Zurich and ETH Zurich)



Biography

Davide Scaramuzza does research at the intersection of robotics and computer vision. He did his PhD in robotics and computer vision at ETH Zurich and a postdoc at the University of Pennsylvania. From 2009 to 2012, he led the European project sFly, which introduced the PX4 autopilot and pioneered visual-SLAM-based autonomous navigation of micro drones. For his research contributions, he won several awards, like the IEEE Robotics and Automation Society Early Career Award, Google, Qualcomm, Intel Research Awards, and several conference paper awards. In 2015, he cofounded Zurich-Eye, which later became Facebook-Oculus VR Zurich. Many aspects of his research have been prominently featured in the popular press, such as Discovery Channel, BBC, MIT Technology Review Magazine.

Lunch and Dinner

- Coffee breaks will be held in the morning and afternoon.
- Lunch will be provided on the first and second days of the conference (August 29th and 30th).
- On the first day, a light, informal dinner will be held on-site at the conference venue.
- On the second day, a banquet dinner will be held on a traditional Japanese boat cruise.
- The conference will conclude with a farewell dinner on the final day.

Banquet

The conference banquet will be held on a traditional Japanese boat cruise, showcasing the city of Tokyo from the Sumida river. Please join us for a relaxing evening of leisurely sightseeing while enjoying a dinner of Japanese delicacies.



Technical Tour

Tour #1: The Shimizu Institute of Technology, Shimizu Corporation

Tour Details

- ▶ **Date:** Aug. 30th (Fri.)
- ▶ **Time:** 15:30–17:10 (entrance at 15:20)
- ▶ **Tour:**
 - Introduction of the Shimizu Institute of Technology
 - Show rooms in the main building
 - Several research facilities
- ▶ **Notes:**
 - ▶ Maximum of 30 persons
 - ▶ Persons in the construction industry/business are not allowed for entry
 - ▶ No photos/videos allowed in the Institute

Tour #2: Robotics laboratories at Shibaura Institute of Technology

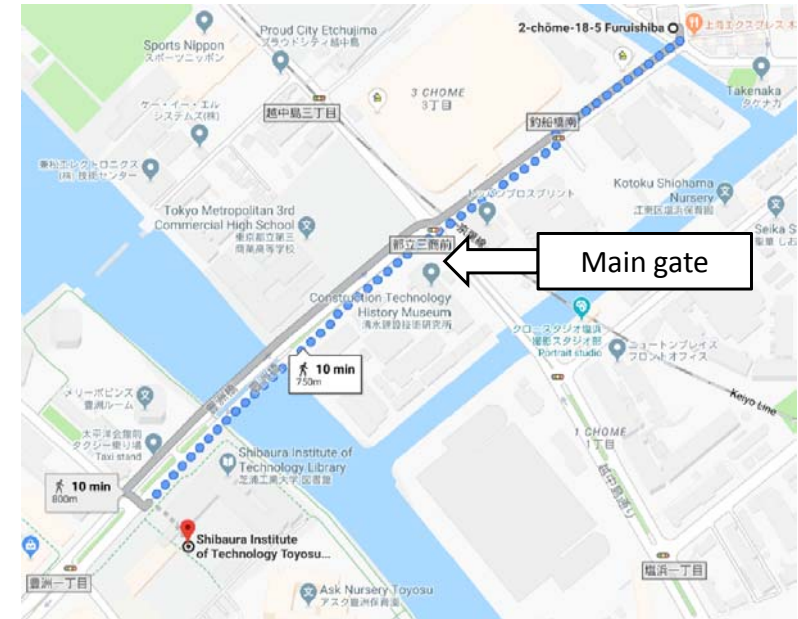
FSR will arrange a visit to several laboratories at Shibaura Institute of Technology for those who are not eligible to the Tour #1.

Tour Details

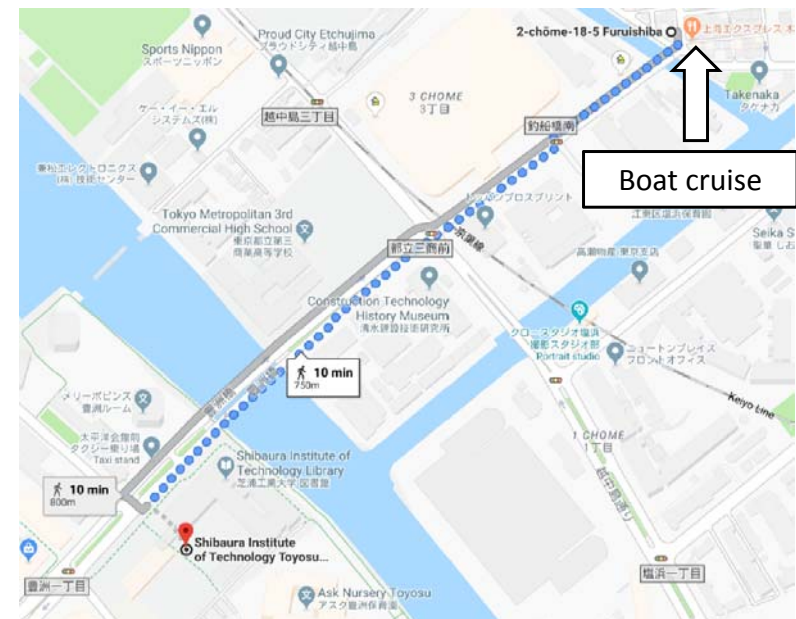
- ▶ **Date:** Aug. 30th (Fri.)
- ▶ **Time:** 15:30–17:00 (Meeting place: Foyer at 15:20)
- ▶ **Tour:**
 - Introduction of the TechPlaza at Shibaura Institute of Technology
 - Technical visit to 4–5 laboratories

Maps

Technical Tour (Aug. 30th)

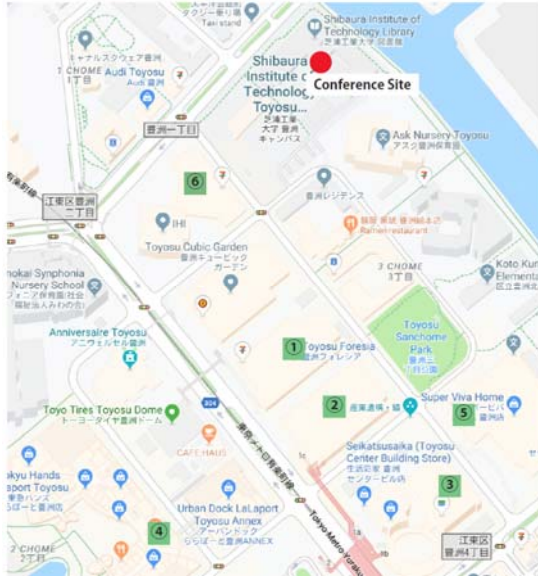


Banquet (Aug. 30th)



Maps

Lunch Map (Aug. 31st)



Lunch Map

※ A variety of restaurants are found in the following buildings

- 1 Toyosu Foresia
- 2 Toyosu Front
- 3 Toyosu Center Building Annex
- 4 URBAN DOCK LaLaport TOYOSU
- 5 Super Viva Home
- 6 Toyosu IHI Building

Farewell part at Café Haus (Aug. 31st)

