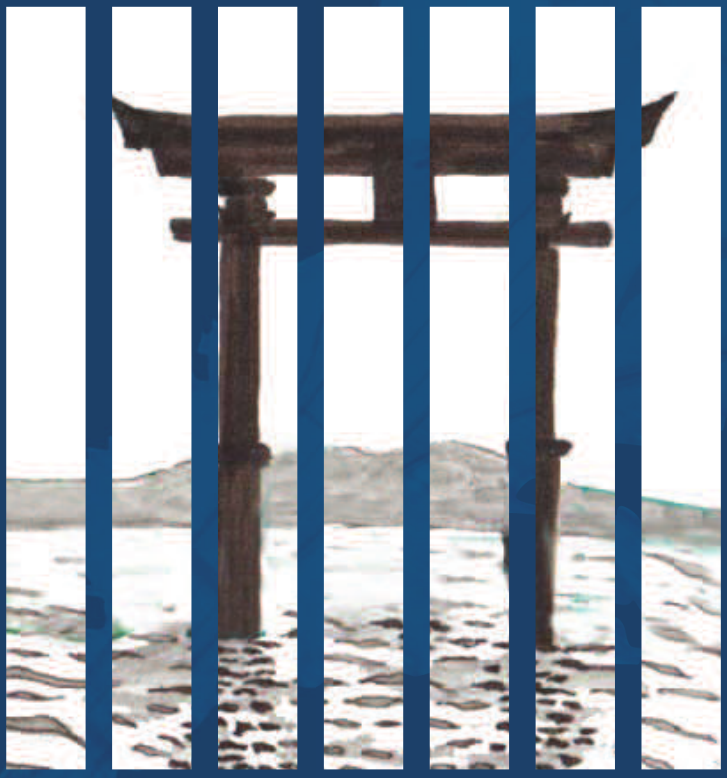
IFSA SCIS 2017

JUNE 27-30, 2017, OTSU, JAPAN



THE 17TH WORLD CONGRESS ON INTERNATIONAL FUZZY SYSTEMS ASSOCIATION

AND

THE 9TH INTERNATIONAL CONFERENCE ON SOFT COMPUTING AND INTELLIGENT SYSTEMS

INTERNATIONAL FUZZY SYSTEMS ASSOCIATION

SOFT

IEEE SMC Systems, Man, and Cybernetics Society

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IFSA-SCIS 2017

Joint 17th World Congress of International Fuzzy Systems Association and 9th International Conference on Soft Computing and Intelligent Systems

Program Book

Co-Sponsors:
The International Fuzzy Systems Association (IFSA)
Japan Society for Fuzzy Theory and intelligent informatics (SOFT)

Technical Sponsor:
IEEE Systems, Man, and Cybernetics Society

June 27–30, 2017

Piazza Omi, Otsu city, Shiga Prefecture, Japan

Welcome Message for IFSA-SCIS 2017

The 17th World Congress of the International Fuzzy Systems Association (IFSA) and the 9th International Conference on Soft Computing and Intelligent Systems (SCIS) are jointly held from June 27th to 30th, 2017 in Otsu, Shiga, Japan. The theme of this conference is "FUZZY RENAISSANCE: To the FUTURE. Learn from the past", and the aim of this conference is to bring together researchers (both theoreticians and practitioners) all along the world working on fuzzy sets, fuzzy logic, fuzzy systems, soft computing and related areas. I hope scientists, engineers, students, and professionals will discuss, exchange ideas, foster interaction between industry and academy through building multidisciplinary linkages, and to disseminate the most recent advancements in the field. In addition, the conference also provides a forum for the exchange of ideas between participants all over the world.

It is the second time that this conference takes places in Japan. It was "VERY LONG" years ago when this conference was held in Japan last time. Indeed, it was in 1987, i.e. exactly 30 years ago, when the second IFSA Congress was held in Tokyo. The membership value for "VERY LONG" from the first conference held in Japan is "almost 1.0". In the past 30 years, we have experienced a "Fuzzy boom" both before and after the 1990 bubble economy in Japan, and we have developed many fuzzy logic based products, such as fuzzy home appliances, trains, cars, elevators and plants, fuzzy expert system, fuzzy medical diagnostic systems, and neuro-fuzzy systems. Meanwhile, we experienced dark times in fuzzy research since 1990 mainly because of the ruptured bubble. Many excellent elderly researchers retired, and the young researchers who do not have any chance to known the origins of fuzzy research are increasing in numbers. We have a responsibility to pass along the wisdom of research and development in fuzzy systems to our next generation, young researchers and their followers. We must definitely advocate the significance of fuzzy system research to the next generation of young researchers, and we have a responsibility to provide the fruits of "SOFT Artificial Intelligence" to next-generation researchers.

Shiga Prefecture is the home of Lake Biwa, the largest freshwater lake in Japan, with an area of about 670 km². Lake Biwa is of tectonic origin and is one of the world's oldest lakes, dating to at least 4 million years ago. Because of its proximity to the ancient capital, Kyoto, references to Lake Biwa appear frequently in Japanese literature, particularly in poetry and in historical accounts of battles. We call Lake Biwa a "Mother Lake". I believe that some new discovery in "SOFT Artificial Intelligence" is born on the lakeside of Lake Biwa. I hope that you have good opportunities to celebrate, to meet old friends, to discover young researchers and new ideas, to work together and, for sure, to enjoy the city.

The technical program of IFSA-SCIS 2017 includes regular and special sessions, three plenary talks, a legend lecture, a futuristic event, and a summer school for young researchers attended by researchers from over 39 countries. The plenary talks will be given by the following distinguished researchers: Humberto Bustince (Public University of Navarra, Spain), Dan Ralescu (University of Cincinnati, USA) and Hisao Shiizuka (Kogakuin University, Japan). The legend lecture is given by Michio Sugeno (Tokyo Institute of Technology, Japan).

This conference is the result of the hard work and dedication of a large number of people, and the collaboration of several institutions. I would like to acknowledge the support of the sponsors and the help of the organizations involved in making this conference possible. I would also like to acknowledge the chairs, the international program committee members, the papers reviewers, the organizers of special sessions, the local organizing committee members, and many others who significantly contributed. Finally, I would like to give my thanks to all of you, authors and participants.

Isao Hayashi
President, Japan Society for Fuzzy Theory and Intelligent Informatics
General Chair of IFSA-SCIS 2017
Kansai University, Japan

Technical Overview

The introduction of Fuzzy Logic by Lofti A. Zadeh in the second half of the last century, allowed the representation and management of incomplete, imprecise, vague or deficient information supported by a strong theoretical framework, close to that of the human understanding. Fuzzy applications have been also quickly developed in a lot of different domains. This fast and important development was due to the enthusiastic work of many researches, placed worldwide, that working together have opened important and interesting research threads to young generations. Nowadays, Fuzzy Logic must answer to new challenges, many of them associated to the meteoric rise of the volume of data in our hyperconnected world.

IFSA-SCIS 2017, the 17th World Congress of the International Fuzzy Systems Association (IFSA) and the 9th International Conference on Soft Computing and Intelligent Systems (SCIS) highlights the good health of fuzzy research community. More than 500 hundred authors, combining experience and new blood, are represented in this Conference. Classical topics as well as other newer ones will be presented and discussed during these days. Robotics, Recommender systems, Semantic Web Technologies, Healthcare, Massive data, Brain Engineering are some of the examined topics to answer current challenges.

One of the most remarkable events associated to IFSA-SCIS 2017 is the Summer School. It tries to introduce young or novel researchers to the last fuzzy trends. This summer school edition is focused on three interesting topics: (1) Fuzzy signatures as a tool for describing, manipulating and reasoning with uncertain, subjective and incomplete data. (2) The role of soft computing methods in human activity understanding and recognition and (3) Big Data Handling in Large Scale Social Simulation. In addition, students take an active role by introducing his research, taking advantage of the important IFSA-SCIS 2017 attendees.

Thus, the philosophy of this joint new edition of IFSA and SCIS aims to become a great forum where researchers discuss about new advances and open problems related to fuzzy and soft computing techniques. We hope that during the different parallel sessions the exchange of ideas, suggestions and future collaborations will lead to a further development of the fuzzy research. We also think that Plenary Speakers will present trending issues related the fuzzy environment, which can help young researchers to focus their goals.

On behalf of the whole Program Committee, I would like to acknowledge the reviewers, special session organizers, other event organizers and also the Organizing Committee for their hard and huge work. I would also like to acknowledge the Plenary and Legend Speakers for being here and share with us their knowledge. Finally, thank you very much to all authors and attendees for making possible this great event. Without you all, IFSA-SCIS 2017 would be infeasible.

Irene Díaz
Program Chair of IFSA-SCIS 2017
University of Oviedo, Spain

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PLENARY TALK 1 (June 28, 9:20–10:20)

Pre-Aggregation Functions: Theory and Applications in Classification and Image Processing

Prof. Humberto Bustince
Public University of Navarra, Spain

In recent times, there has been a huge interest in the study of generalized forms of monotonicity which allows to define and/or cover many functions which, not being aggregation functions because they are not monotone in an usual sense, are of great interest for applications in fields such as image processing, classification or decision making. One important step in this direction has been the introduction of the notion of pre-aggregation function, which is a function with the same boundary conditions as an usual aggregation function, but for which only monotonicity along some fixed direction is required. This notion has shown itself very useful for classification problems, and it has also allowed to include in a common framework some relevant operators outside from the scope of aggregation functions, as it is the case, in particular, of the mode. The requirement of monotonicity along a fixed direction which is the same for every considered point in the unit hypercube is, however, still too strict for application in fields such as image processing, for instance. When dealing with edge detection in an image, for instance ,relevant directions to be considered may change from one pixel (point) to another one. Taking into account this consideration, among others, in this talk we speak about directional monotone functions and ordered directionally monotone functions, and we introduce the idea of pre-aggregation function. We also discuss the applications of these concepts in image processing and classification problems.

Biography

Humberto Bustince is full professor of Computer Science and Artificial Intelligence in the Public University of Navarra. He is the main researcher of the Artificial Intelligence and Approximate Reasoning group of this University, whose main research lines are both theoretical (aggregation functions, information and comparison measures,fuzzy sets and extensions) and applied (image processing,classification, machine learning, data mining and big data). He has led 11 I+D public-funded research projects, at a national and at a regional level. Now he is the main researcher of a project in the Spanish Science Program and of scientific network about fuzzy logic and soft computing. He has been in charge of research projects collaborating with private companies such as Caja de Ahorros de navarra, INCITA, Gamesa or Tracasa. He has taken part in two international research projects. He has authored more than 200 works, according to Web of Science, in conferences and international journals, with around 100 of them in journals of the first quartile of JCR. Moreover, five of these works are also among the highly cited papers of the last ten years, according to Science Essential Indicators of Web of Science. He has regular collaborations with leading international research groups from countries such as the United Kingdom, Belgium, Australia, Germany, Portugal the Czech Republic, Slovakia, Canada, the United States or Brasil. He is editor-in-chief of the online magazine Mathware&Soft Computing of the European Society for Fuzzy Logic and technologies, EUSFLAT) and of the Axioms journal. He is associated editor of the IEEE Transactions on Fuzzy Systems journal and member of the editorial board of the journals Fuzzy Sets and Systems, Information Fusion, International Journal of Computational Intelligence Systems and Journal of Intelligent & Fuzzy Systems. He is co-author of a monography about avergaing functions and co-editor of several books. He has organized some reknowned international conferences such as EUROFUSE 2009 and AGOP 2013. He is Senior member of the IEEE Association and Fellow of the International Fuzzy Systems Association (IFSA).

PLENARY TALK 2 (June 28, 13:00–14:00)

Statistical Decision-Making in Mixed Models of Uncertainty

Prof. Dan Ralescu
University of Cincinnati, USA

Many statistical data are imprecise due to factors such as measurement errors, computation errors, and lack of information. In such cases, data are better represented by intervals-or fuzzy sets- rather than by single numbers. Existing methods for analyzing interval-valued data include regressions in the metric space of intervals and symbolic data analysis, the latter being proposed in a more general setting. However, there has been a lack of literature on the parametric modeling and distribution-based inferences for interval-valued, and fuzzy-valued data. We propose a normal hierarchical model for random sets-in particular for random intervals. In addition, we develop a minimum contrast estimator (MCE) for the model parameters, which is both consistent and asymptotically normal. Simulation studies support our theoretical findings and show promising results. Finally, we successfully apply our model and MCE to a real data set.

Biography

Dan Ralescu is the coauthor of the first comprehensive monograph on fuzzy sets and systems, published in the early 1970s. He has authored and coauthored more than 80 papers in scientific journals. In the late 1970s he has initiated the theory of fuzzy random variables and mixed models of uncertainty. His recent interests are in statistical decision making under various kinds of uncertainty. He was awarded the IFSA Fuzzy Pioneer in 2003. His international collaborations include lectures in Brazil, China, France, Japan, and Spain, among others.

PLENARY TALK 3 (June 29, 9:00–10:00)

Knowing Sensitivity and Intelligence from the Viewpoint of System and Design

Prof. Hisao Shiizuka
Kogakuin University, Japan

When we make decisions in everyday life, we infer some form. It is known that there are three reasoning methods: deduction, induction, and abduction. Inference is closely related to sensitivity and intelligence. First of all, in this keynote I will confirm the following. Intelligence is a general ability including ability to infer, plan, solve problems, think abstractly, understand complex ideas, and learn quickly. It also includes the ability to learn from experience. Intelligence is not simply for learning from books, for narrow academic skills or for good grades in the exam. It rather represents a broader capability to understand our environment, "understanding" things and "giving meaning" and finding out what to do.
The following items are three key elements of intelligence that intelligence experts are reaching agreement:

1. Abstract thinking or reasoning (which is agreed by 99.3% of researchers)
2. Problem solving ability (This is agreed by 97.7% of researchers)
3. Ability to gain knowledge (this is agreed by 96.0% of researchers)

Well, here I first propose "Innovation Tetra" which constitutes the basis of reasoning. Furthermore, I apply this "Innovation Tetra" to show the possibility of developing new reasoning. The fuzzy inference method so far is based on deduction. In order to develop a new way of fuzzy reasoning, it would be to establish an inference method that can be applied to new artificial intelligence by leaving deductive reasoning.
In this keynote I would like to describe some related matters from the above viewpoint.

Biography

Dr. Hisao Shiizuka received his B.S. and M.S. degrees in the Electrical Engineering from Kogakuin University, Tokyo Japan, in 1971 and 1973, respectively, and Doctor of Engineering (Ph D) on "Properties of Three Terminal RC Networks and Their Application to Synthesis Problems" from Kogakuin University, Tokyo Japan, in 1983.
He had been a Professor of Kansei Engineering, Information Design and Soft Computing at Faculty of Informatics, Kogakuin University since 2006, Tokyo Japan, after having contributed for 11 years as a Professor of Artificial Intelligence System, Linear System Theory and Electric Circuits, to the Department of Computer Science and Communication Engineering at Kogakuin University since 1995, Tokyo Japan.
He was a visiting researcher at The University of Illinois at Chicago (UIC) in 1993. He is engaged in the circuit theory, the graph theory, the Petri net, and the application of the system simulation and the fuzzy theory and the researches on a soft computing and Kansei engineering, etc. Currently, his research interests are Kansei Engineering, Soft Computing, Information Design and Artificial Intelligence. He was a director of Japan Society for Fuzzy Theory in 1995-1997, and was a director of Japan Society of Kansei Engineering in 1999-2001. He was the President of Japan Society of Kansei Engineering, from 2007 to 2013. He holds a lot of the chair of the academic society successively.
Now he is a Professor emeritus, Kogakuin University, Senior Research Scientist of Fuzzy Logic Systems Institute, and Chair of International Society of Affective Science and Engineering, and also he is the president of Shiizuka Kansei Engineering Laboratory, Co., Ltd.

LEGEND LECTURE (June 30, 11:20–12:20)

Current Perspectives on Choquet Calculus

Prof. Michio Sugeno
Tokyo Institute of Technology, Japan

By Calculus (the study of change), we mean Integral and Differential Calculus originated with Newton and Leibniz in 17C. In this talk, we discuss Choquet Calculus which is nonlinear in general. So far most studies on Choquet integrals have been devoted to the discrete case. In Choquet Calculus we deal with continuous Choquet integrals and also derivatives. First we show how to calculate continuous Choquet integrals. To this aim, we consider distorted Lebesgue measures (a class of fuzzy measures), and non-negative and non-decreasing functions; distorted Lebesgue measures are obtained by the monotone transformation of Lebesgue measures. Next we define derivatives of functions with respect to distorted Lebesgue measures. We also discuss the identification of distorted Lebesgue measures. Then we show a relation between Choquet Calculus and Fractional Calculus. Further, we consider differential equations with respect to distorted Lebesgue measures and give their solutions. Lastly we present the concept of conditional distorted Lebesgue measures.

Biography

After graduating from the Department of Physics, the University of Tokyo, he worked at a company for three years. Then, he served the Tokyo Institute of Technology as Research Associate, Associate Professor and Professor from 1965 to 2000. After retiring from the Tokyo Institute of Technology, he worked as Laboratory Head at the Brain Science Institute, RIKEN from 2000 to 2005 and, then as Distinguished Visiting Professor at Doshisha University from 2005 to 2010. Finally, he worked as Emeritus Researcher at the European Centre for Soft Computing in Spain from 2010 to 2015.

He is Emeritus Professor at the Tokyo Institute of Technology. He was President of the Japan Society for Fuzzy Theory and Systems from 1991 to 1993, and also President of the International Fuzzy Systems Association from 1997 to 1999. He is the first recipient of the IEEE Pioneer Award in Fuzzy Systems with Zadeh in 2000. He also received the 2010 IEEE Frank Rosenblatt Award and Kampé de Feriét Award in 2012.

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Yuying Shi
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Juliana Shirabayashi
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Dominik Slezak
Gregory Smits
Jaime Solano
Hiroshi Someya
Alexander Sostak
Sotir Sotirov
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Olivier Strauss
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Shun-Feng Su
Warattha Sukpongthai
Peter Sussner
Reiji Suzuki
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Marco Elio Tabacchi
Kiyoharu Tagawa
Zdenko Takáč
Yasutake Takahashi
Yasufumi Takama
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Bouadi Tassadit
Keiji Tatsumi
Wannaporn Teekeng
Arit Thammano
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- Fuzzy Logic Systems Institute

AWARDS

IFSA-SCIS2017 Best Paper Award

The IFSA-SCIS2017 Best Paper Award will be presented to the author(s) of the paper that is considered to make the most significant contribution to the conference.

Evaluation: The best paper award is determined based on the following process.

Step1: IFSA-SCIS 2017 Award Committee evaluates all accepted full papers based on their review reports and selects (maximum) five papers as the candidates. The committee will inform the corresponding authors that they are the finalists for the best paper award.

Step2: The finalists give their presentations and the winner is finally determined based on their oral presentations. The session chair and other two referees will evaluate the presentations.

To be selected as the award winner, at least one author should pay the registration fee. Of course, no-show papers are ineligible for the best paper award.

IFSA-SCIS2017 Outstanding Poster Award

The outstanding poster award will be given to the poster presenter(s) that is(are) considered to recognize excellence in research and presentation. All registered conference participants can vote for the selection of the award winner during the Poster Session at **15:00-16:20 on Thursday, June 29, 2017**.

The IFSA Student Paper Award

The IFSA Student Paper Award is the award granted by International Fuzzy Systems Association (IFSA) in recognition of the students' research and development efforts in fuzzy set theory and applications; and to motivate communication and interaction among students and the fuzzy set teaching and research communities worldwide.

Application: A paper submitted to IFSA-SCIS2017 via the IFSA-SCIS2017 regular submission procedure can be considered, with the following materials provided by the student as the first author of the paper:

(1) An applicant statement (via email text or email attachment) from the student is sent to IFSA Vice President for Awards, indicating that he/she would like his/her paper (with the title, all author/coauthor names, affiliations, paper ID) to be considered for *the IFSA Student Paper Award.*

(2) A scanned copy of the confirmation statement is attached together with the above applicant statement, which is signed by the head of the department/school or director of the program, indicating the name of the student, the names of the university and the program where the student has registered for study, and the period of the program/study.

Evaluation: There are three steps in evaluating the papers for *the IFSA Student Paper Award*, conducted by a selection team of at least 5 scholars chaired by IFSA VP for Awards:

Step 1: Qualification screening for the applicants will be made based upon the two statements mentioned above.

Step 2: The papers of qualified applicants will be short-listed in ranking based upon the paper review reports from the IFSA-SCIS2017 regular review process.

Step 3: The short-listed papers will be further examined and assessed to identify up to 3-5 finalists in ranking.

Rewards: Each finalist will be granted t*he IFSA Student Paper Award* at IFSA-SCIS2017 with a certificate for the award, and there will be a cash premium (*i.e.*, 500Euro, 200Euro or 100Euro for the first place, second place or third place, respectively (or in a currency of the equivalent amount)).

Award ceremony

All award winners will be announced and awarded in the award ceremony at **12:20 on Friday, June 30.** All candidates are expected to attend the ceremony.

Conference Venue

IFSA-SCIS 2017 will take place at Piazza Omi, Otsu city, Shiga Prefecture, Japan.
Address: 1-1-20, Nionohama, Otsu city, Shiga prefecture, 520-0801 Japan

From JR Zeze Station to the Conference Site, please consult the following map :

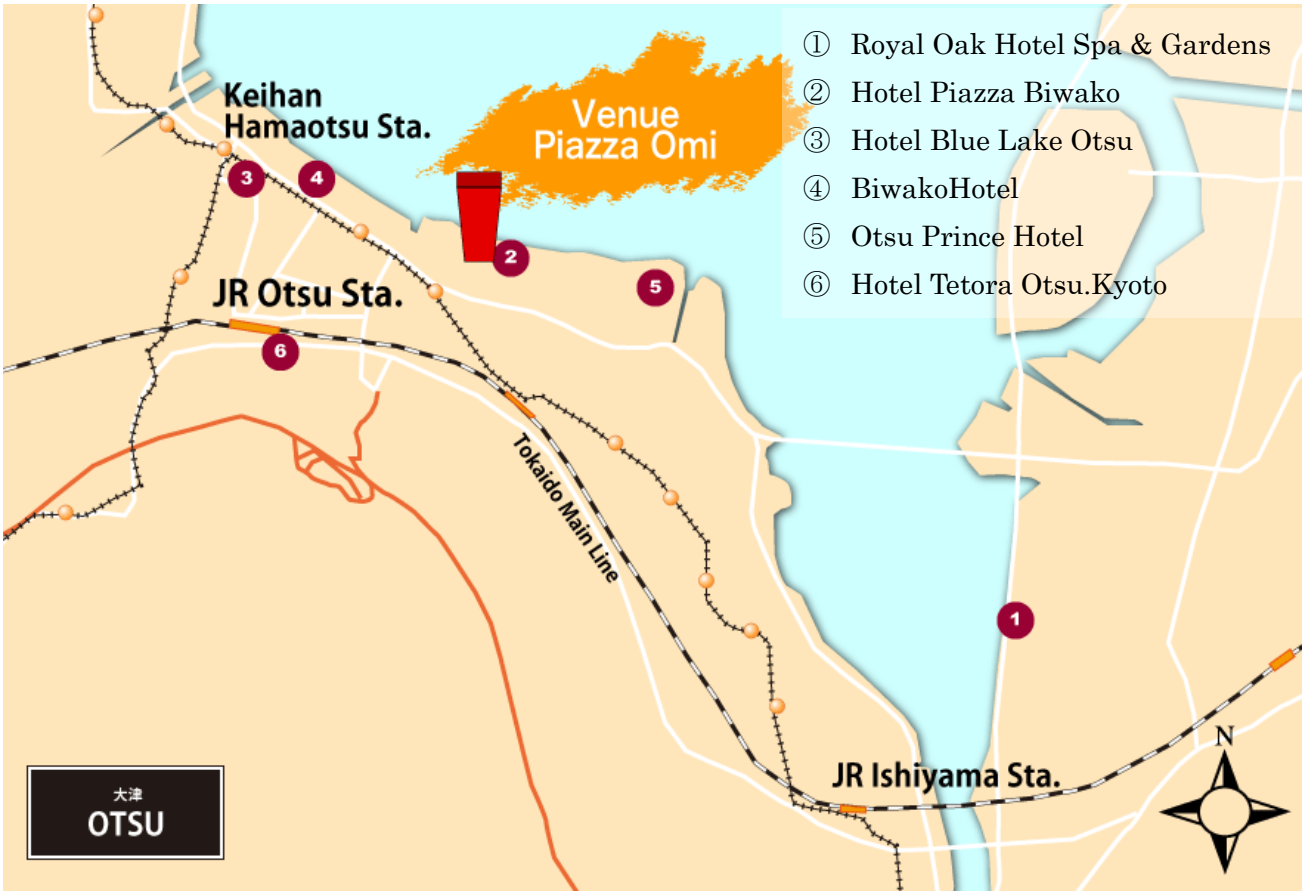
From Keihan Ishiba Station to the Conference Site, please consult the following map:

How to get to JR Zeze Station from Kyoto Station

From JR Kyoto Station, Local trains departing from Platform 2 (except on Saturday and Sunday early mornings) go to JR Zeze Station in Biwako Line. Check the type of your train is not “LocalKosei-Line” but “Local” from direction boards (a photo of a direction board is shown below) and/or announcements on platforms.

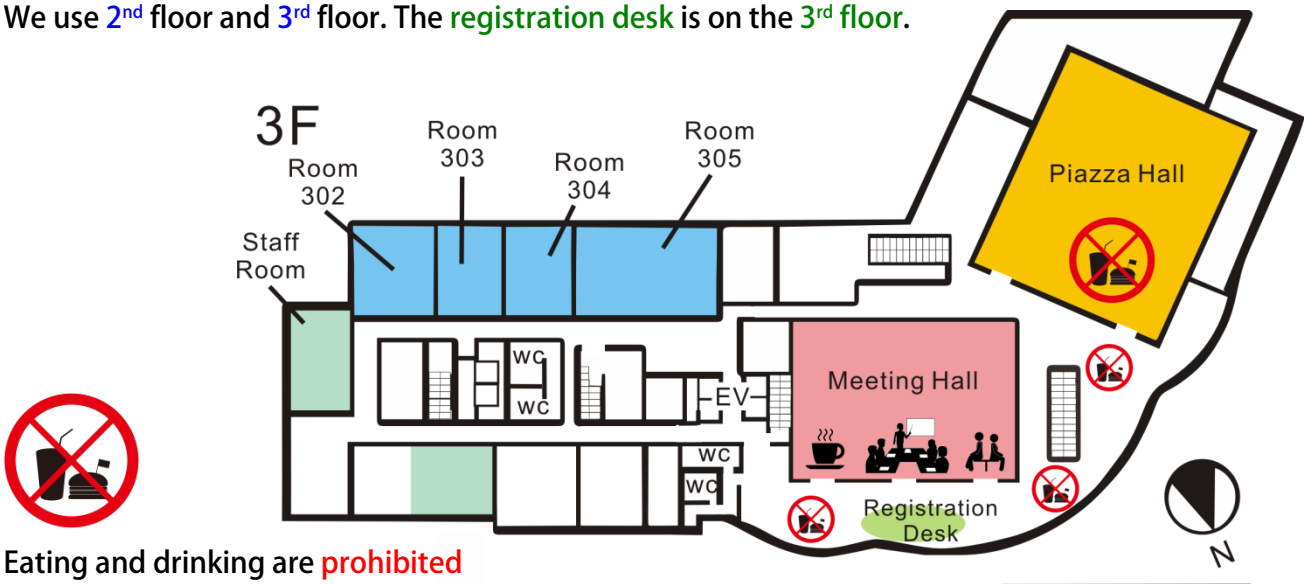
Zeze Station is the third stop from Kyoto Station (Kyoto → Yamashina → Otsu → Zeze) by Local trains.

Hotel Locations around Conference Site

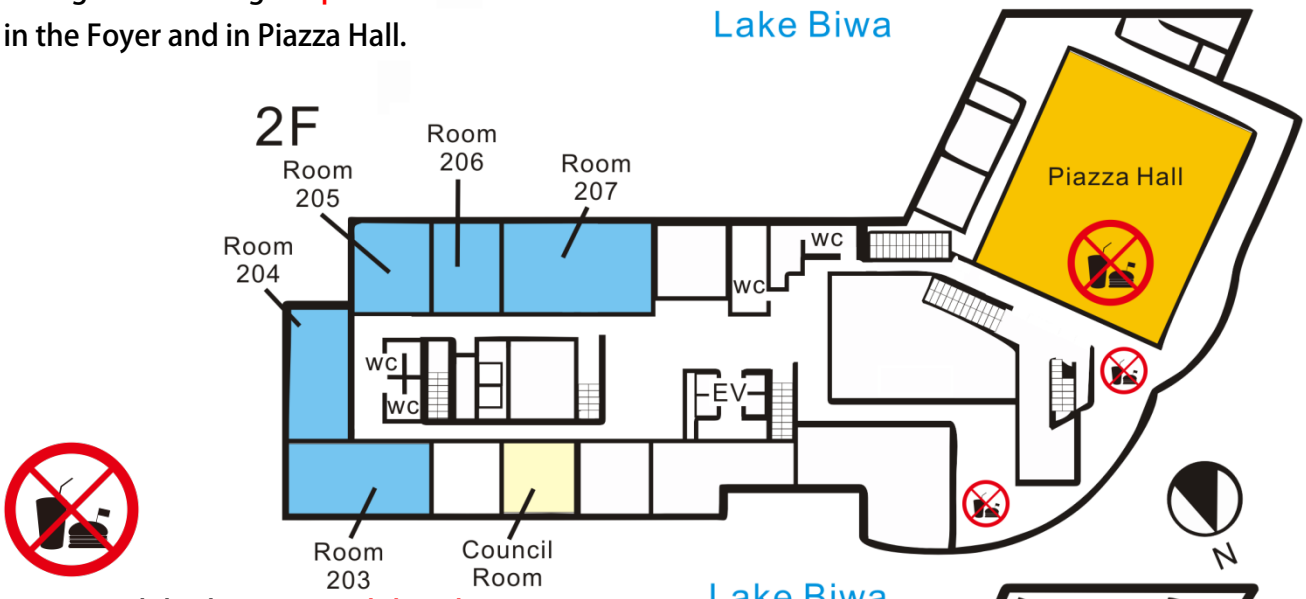


Floor Map (Piazza Omi)

We use 2nd floor and 3rd floor. The registration desk is on the 3rd floor.



Eating and drinking are prohibited in the Foyer and in Piazza Hall.



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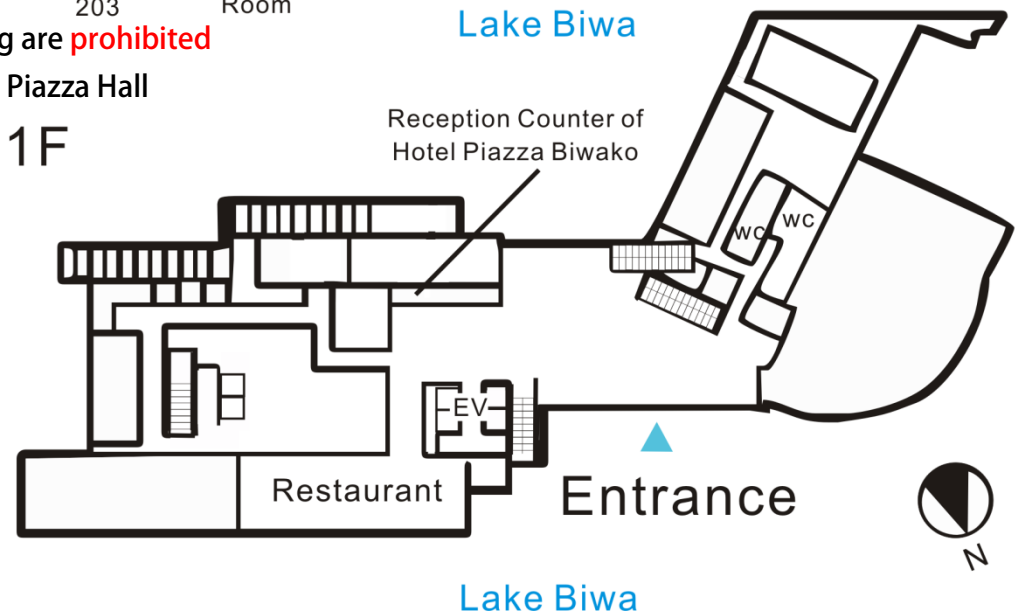


Reception and Banquet

Reception

Date: Tuesday, June 27, 2017

Time: 18:30 ~

Venue: Meeting Hall (3rd floor), Piazza Omi

Banquet

Date: Thursday, June 29, 2017

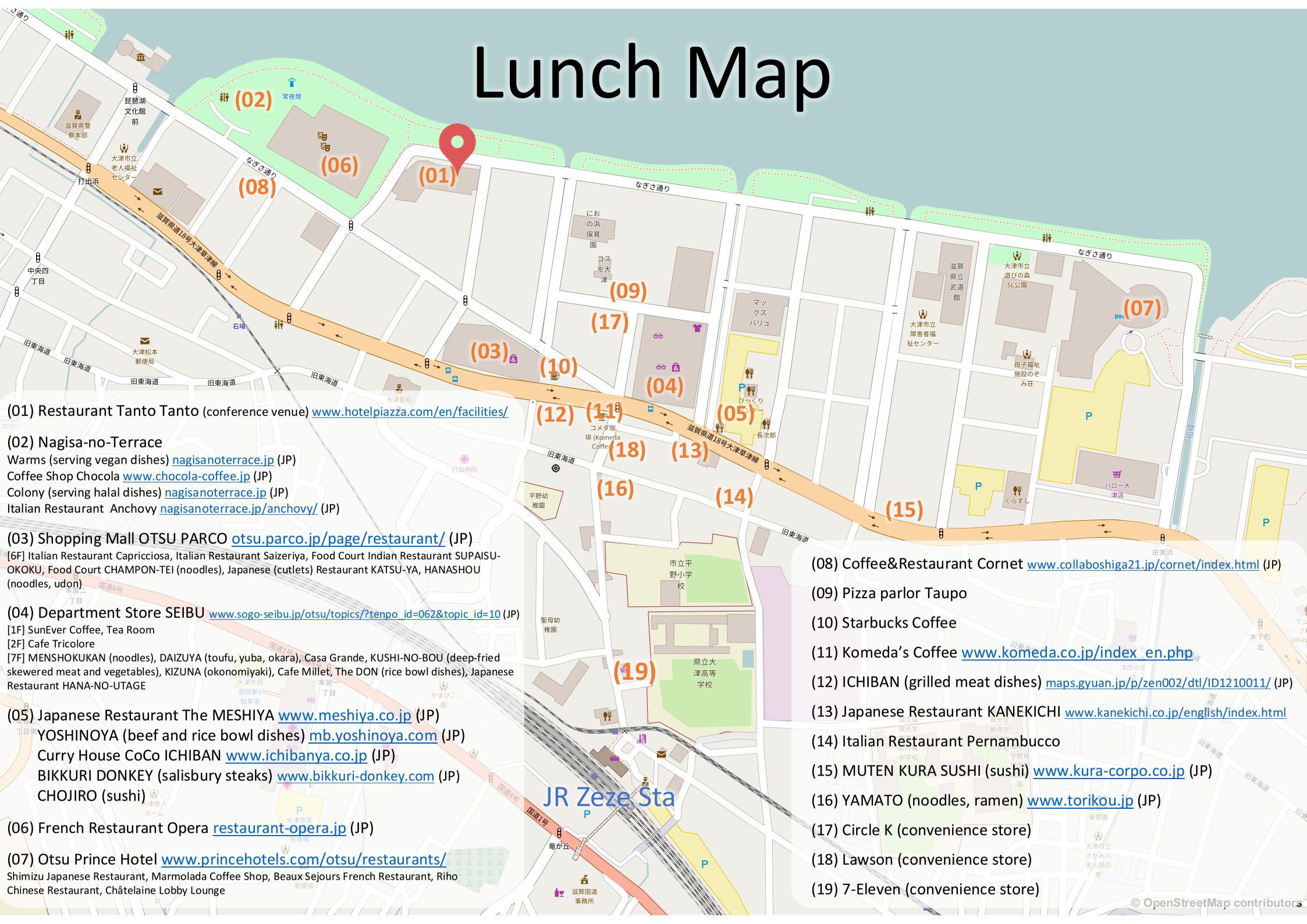
Time: 19:00 ~

Venue: Royal Oak Hotel Spa & Gardens, ORCHID (Basement Level 1)

< Access to Royal Oak Hotel Spa & Gardens >

1. From the conference venue: Free shuttle bus is available.
   (17:30 ~ 18:00, approximately 20 minute ride)
2. From JR Ishiyama Station: Free hotel shuttle bus is available at North Exit.
   (Every hour on the hour, approximately 10 minute ride)

Lunch Map



(01) Restaurant Tanto Tanto (conference venue) www.hotelpiazza.com/en/facilities/

(02) Nagisa-no-Terrace
Warms (serving vegan dishes) nagisanoterrace.jp (JP)
Coffee Shop Chocola www.chocola-coffee.jp (JP)
Colony (serving halal dishes) nagisanoterrace.jp (JP)
Italian Restaurant Anchovy nagisanoterrace.jp/anchovy/ (JP)

(03) Shopping Mall OTSU PARCO otsu.parco.jp/page/restaurant/ (JP)
[6F] Italian Restaurant Capricciosa, Italian Restaurant Saizeriya, Food Court Indian Restaurant SUPAISU-OKOKU, Food Court CHAMPON-TEI (noodles), Japanese (cutlets) Restaurant KATSU-YA, HANASHOU (noodles, udon)

(04) Department Store SEIBU www.sogo-seibu.jp/otsu/topics/?tenpo_id=062&topic_id=10 (JP)
[1F] SunEver Coffee, Tea Room
[2F] Cafe Tricolore
[7F] MENSHOKUKAN (noodles), DAIZUYA (toufu, yuba, okara), Casa Grande, KUSHI-NO-BOU (deep-fried skewered meat and vegetables), KIZUNA (okonomiyaki), Cafe Millet, The DON (rice bowl dishes), Japanese Restaurant HANA-NO-UTAGE

(05) Japanese Restaurant The MESHIYA www.meshiya.co.jp (JP)
YOSHINOYA (beef and rice bowl dishes) mb.yoshinoya.com (JP)
Curry House CoCo ICHIBAN www.ichibanya.co.jp (JP)
BIKKURI DONKEY (salisbury steaks) www.bikkuri-donkey.com (JP)
CHOJIRO (sushi)

(06) French Restaurant Opera restaurant-opera.jp (JP)

(07) Otsu Prince Hotel www.princehotels.com/otsu/restaurants/
Shimizu Japanese Restaurant, Marmolada Coffee Shop, Beaux Sejours French Restaurant, Riho Chinese Restaurant, Châtelaine Lobby Lounge

(08) Coffee&Restaurant Cornet www.collaboshiga21.jp/cornet/index.html (JP)

(09) Pizza parlor Taupo

(10) Starbucks Coffee

(11) Komeda's Coffee www.komeda.co.jp/index_en.php

(12) ICHIBAN (grilled meat dishes) maps.gyuan.jp/p/zen002/dtl/ID1210011/ (JP)

(13) Japanese Restaurant KANEKICHI www.kanekichi.co.jp/english/index.html

(14) Italian Restaurant Pernambucco

(15) MUTEN KURA SUSHI (sushi) www.kura-corpo.co.jp (JP)

(16) YAMATO (noodles, ramen) www.torikou.jp (JP)

(17) Circle K (convenience store)

(18) Lawson (convenience store)

(19) 7-Eleven (convenience store)

FUTURE EVENT

&

SUMMER SCHOOL

Fuzzy Publication: A way of publishing your creative and innovative idea.

Does ‘f’ of ‘fuzzy’ also mean future? Join us to find out. IFSA-SCIS2017 is proudly organizing a special futuristic event concerning a new way of publishing your work. Interested authors should contact Futuristic Event Chair. There is NO traditional peer review, NO format, or NO deadline while maintaining a persistent online appearance/publication, real feedback/reviews, and making genuine impacts.

Why do we consider Fuzzy Publication?
This is because it is very difficult or virtually impossible for peer reviewers to judge the significance, especially creative and thought-provoking ideas. Our seminal paper "Fuzzy sets" by Professor Lotfi Zadeh, for instance, was rejected by many journals and finally was published as a courtesy by the journal that Professor Zadeh served on the editorial board for many years. This is then one of the most cited papers in Computer Science -- likely the second most followed by that famous Dijkstra's 2-page paper about the shortest-path algorithm. Now, we have webs and SNS that are very multimedia rich. We believe that it is the time to consider alternative publication media.

Notes:

1. The website for this event will be persistently maintained as long as possible.
   (pls. search “Fuzzy Publication”)
2. Your entry will be reviewed in a manner of social networking services such as 'Like', 'LoL' and others as appropriate. Very simple but real feedback.
3. Comments from readers are available and anyone can review your entry online.

Liaison Contact to the Futuristic Event Chair:
Professor Junji Nishino (Japan) E-mail: nishinojunji@uec.ac.jp

FAQ on Fuzzy Publication:
Q1. What is a difference from arXive
A1. Any paper will be published without any acceptance by any conference or journal.
Q2. Can we cal this publication an academic paper?
A2. This is a scientific communication source rather than an academic paper.
Q3. Can we count this publication as an official achievement?
A3. It is totally up to you and evaluators for job hunting, promoting, and defending your academic degree.
Q4. Who guarantee the quality of this publication?
A4. No society. Readers themselves. Readers will express their impression and discuss the contents among them. The quality will gradually be evaluated.
Q5. Do some publications include wrong ideas or results?
A5. Unfortunately, yes.
Q6. Any merit of this publication?
A6. Any idea can be published because of no peer-review. Sometimes, highly novel ideas cannot properly be evaluated by a small number of reviewers.
Q7. Any merit for IFSA-SCIS2017?
A7. In future, we may be able to say IFSA-SCIS2017 was the first conference where your highly novel ideas were published.
Q8. Do you mind if other conferences or societies mimic this style of publications?
A8. It is a good thing. Our aim is to show alternative way of publishing novel ideas.
Q9. Can we modify own publications after the conference?
A9. Yes, it is possible. We accept any comments online.
Q10. Some publications may be immature.
A10. Probably. But you can update your publication (i.e., idea) according to readers' comments.

IFSA-SCIS Summer School
(Reservation Required)

We are very happy to have IFSA-SCIS Summer School during IFSA-SCIS 2017. The school attendants enjoy the following program. Through the school programs, we hope the attendants become familiar with topics relating to soft computing and join a new world-wide academic network.

6/27 (Tue)

16:00 - 16:05 **Opening Remarks**

Irene Díaz (Program Chair of IFSA-SCIS 2017)

16:05 - 16:20 **Guidance & Introduction**

Tadahiko Murata (School Chair)

16:30 - 18:00 **Class 1:** Chaired by Suguru N. Kudoh (Vice School Co-Chair)

Fuzzy Signatures for Describing, Manipulating and Reasoning with Uncertain, Subjective and Incomplete Data
Laszlo T. Koczy

18:30 - 19:30 Reception (Conference program)

19:40 - 21:00 **Flush Talks of Students**
Attendants present a three-minute talk to introduce their own research theme.

6/28 (Wed)

16:30 - 18:00 **Class 2:** Chaired by Katsushige Fujimoto (Vice School Co-Chair)

Human Activity Understanding and Recognition - Role of Soft Computing Methods -
Md. Atiqur Rahman Ahad

18:30 - 21:00 **Dinner** at “Nagisa no Terrace (Waterside Terrace)”

21:00 - 22:15 **Group Discussion on Students Research**
Chaired by Luigi Troiano (Vice School Co-Chair)

6/29 (Thu)

16:30 - 18:00 **Class 3:** Chaired by Yusuke Nojima (Program Co-Chair of IFSA-SCIS 2017)

Big Data Handling in Large Scale Social Simulation
Takeshi Uchitane & Tadahiko Murata

18:00 - 18:05 **Concluding Remarks**

Atsushi Inoue (Vice General Chair of IFSA-SCIS 2017)

18:05 Shuttle Bus to Banquet Place (Free of Charge)

19:00 - 21:30 Banquet (Conference program)

Contact: School Committee Chair: Tadahiko Murata, murata@kansai-u.ac.jp

Special Thanks to School Sponsors:

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OMRON

Technical Program on Wednesday 28

Full Paper Presentation: 20 min (including discussions)
Position Paper Presentation (its session ID begins with 'P-'): 15 min (including discussions)
Poster Presentation Core Time: 15:00–16:00, 29 June 2017.

9:00–9:20, Wednesday 28, Piazza Hall, Welcome Address

9:20–10:20, Wednesday 28, Piazza Hall, Plenary Talk 1 (Chair: Irene Díaz)

- Pre-Aggregation Functions: Theory and Applications in Classification and Image Processing

  Humberto Bustince

10:40–12:00, Wednesday 28, Room 203, SS-02-1 Uncertainty Handling in Recommender and Decision Support Systems (Chair: Ivan Palomares Carrascosa)

- Uncertain Information Fusion and Knowledge Integration: How to Take Reliability into Account (Paper ID: #7)

  Hung Nguyen, Kittawit Autchariyapanitkul, Olga Kosheleva and Vladik Kreinovich

- Graded Associations in Situation Awareness (Paper ID: #68)

  Trevor Martin and Ben Azvine

- An Interval Type-2 Fuzzy Model for Review Topic based Recommendation (Paper ID: #73)

  Yue Ma, Guoqing Chen and Qiang Wei

- Probabilistic Argumentation with DST evidence (Paper ID: #79)

  Nguyen Duy Hung

10:40–12:00, Wednesday 28, Room 204, SS-13-1 Image Processing and Computer Vision using Fuzzy Techniques (Chair: Daniel Paternain)

- A fast edge detection model combining mixed L_1 and L_2 fidelity terms (Paper ID: #11)

  Yilin Li, Xiaole Zhang, Yuying Shi, Zhenbing Zhao and Junfeng Xin

- Automatic License Plate Recognition in Difficult Conditions - Technical Report (Paper ID: #51)

  Petr Hurtik and Marek Vajgl

- Single Frame Super Resolution using Bilateral Filter (Paper ID: #92)

  Koji Kita, Michifumi Yoshioka and Katsufumi Inoue

- Hyperspectrum comparison using similarity measures (Paper ID: #156)

  Carlos Lopez-Molina, Cédric Marco-Detchart, Humberto Bustince, Javier Fernandez, Ainara Lopez-Maestresalas and Daniela Ayala-Martini

10:40–12:00, Wednesday 28, Room 205, SS-04-1 Fuzzy and Intelligent Systems (Chair: Shun-Feng Su)

- Positivstellensatz Relaxation for Sum-of-Squares Stabilization Conditions of Polynomial Fuzzy Systems (Paper ID: #9)

  Alissa Ully Ashar, Motoyasu Tanaka and Kazuo Tanaka

- Online System Identification Based on a State-Space Neuro-Fuzzy System (Paper ID: #14)

  Paulo Gil, Tiago Oliveira and Luís Palma

- Stability Analysis for Polynomial Fuzzy Systems Based on Line-Integral Fuzzy Lyapunov Function: A Copositive Relaxation Approach (Paper ID: #16)

  Jairo Moreno Saenz, Motoyasu Tanaka and Kazuo Tanaka

- Cooperative adaptive fuzzy tracking control for a class of nonlinear multi-agent systems (Paper ID: #31)

  Fahimeh Baghbani, M.-R. Akbarzadeh-T. and M.-B. Naghibi Sistani

10:40–12:00, Wednesday 28, Room 206, SS-32-1 Brain Engineering for Soft Behavior (Chair: Isao Hayashi)

- Spatiotemporal Human Brain Activities on Recalling 4-Legged Mammal and Fruit Names (Paper ID: #140)

  Koji Sugimoto, Takahiro Yamanoi, Hisashi Toyoshima, Mika Otsuki, Shin-Ichi Ohnishi and Toshimasa Yamazaki

- Basic Verification of The Brain Areas Related with The Time Measurement to Use BCI (Paper ID: #149)

  Ryosuke Hayasaka, Keita Mitani and Yukinobu Hoshino

- Analysis of transition and reproducibility of spontaneous electrical activity pattern in a living neuronal network (Paper ID: #153)

  Takumi Okada, Wataru Minoshima and Suguru N. Kudoh

- Identification of multiple-tasks-induced-EEG by heuristic BCI with learning type Fuzzy-Template-Matching method (Paper ID: #157)

  Teruo Oda and Suguru N. Kudoh

10:40–12:00, Wednesday 28, Room 207, SS-12 Probability with Fuzziness and Statistical Applications (Chair: Susana Montes)

- Construction of Fuzzy Multiple Deferred State Sampling Plan (Paper ID: #17)

  Robab Afshari and Bahram Sadeghpour Gildeh

- Knowledge processing in decisions under fuzziness and uncertainty (Paper ID: #139)

  Giulianella Coletti and Barbara Vantaggi

- Interval-Valued Risk Measure Models and Empirical Analysis (Paper ID: #195)

  Zihe Li, Jinping Zhang and Xiaoying Wang

10:40–12:00, Wednesday 28, Room 302, SS-17 Intelligent Robotics and Application for Healthcare (Chair: Takenori Obo)

- Weather forecast support system implemented into robot partner for supporting elderly people using Fuzzy logic (Paper ID: #23)

  Julia Szeles, Naoyuki Kubota and Jinseok Woo

- Fuzzy Echo State Network for Heartbeat Detection using Ultrasensitive Vibration Sensor (Paper ID: #100)

  Takenori Obo, Toshiyuki Sawayama, Takuya Sawayama and Naoyuki Kubota

- Fuzzy Wall-Following Control of A Wheelchair (Paper ID: #103)

  Ya-Ting Lee, Chian-Song Chiu and I-Tung Kuo

- Optimizing FELM Ensembles using GA-BIC (Paper ID: #205)

  Wei Shiung Liew, Chu-Kiong Loo and Takenori Obo

10:40–12:00, Wednesday 28, Room 303, SS-21 Uncertain Dynamic State Estimation (Chair: Kazuhiko Kawamoto)

- Real-time Whole Body Imitation by Humanoid Robot based on Particle Filter and Dimension Reduction by Autoencoder (Paper ID: #72)

  Yo Kondo and Yasutake Takahashi

- Kriging-based prediction and interpolation for modeling pedestrian dynamics (Paper ID: #162)

  Kazuhiko Kawamoto, Yoshiyuki Tomura and Kazushi Okamoto

- Stochastic Model on Low Resolution Characters and the Feature of Topological Invariant (Paper ID: #213)
  Takeshi Matsuda
- FML-based Prediction Agent and Its Application to Game of Go (Paper ID: #232)
  Chang-Shing Lee, Mei-Hui Wang, Chia-Hsiu Kao, Sheng-Chi Yang, Yusuke Nojima, Ryosuke Saga, Nan Shuo and Naoyuki Kubota

10:40–12:00, Wednesday 28, Room 304, P-1 Theory 1 (Chair: Douglas Dow)

- New trends on aggregation of finite fuzzy sets (Paper ID: #245)
  María Jesús Campión, Raquel G. Catalán, Esteban Induráin, Inmaculada Lizasoain and Óscar Valero
- Connections between the Approximate Number System and Fuzzy Logic (Paper ID: #269)
  Rodríguez-Muñiz Luis J.
- Spaces with fuzzy partitions and related notions (Paper ID: #272)
  Jiří Močkoř
- Observer Design for Discrete Time Uncertain T-S Fuzzy Systems with Estimated Premise Variables (Paper ID: #291)
  Van-Phong Vu, Wen-June Wang, Yi Ding and Yu-Hsuan Shen
- Isn't Every Sufficiently Complex Logic Multi-Valued Already: Lindenmabum-Tarski Algebra and Fuzzy logic Are Both Particular Cases of the Same Idea (Paper ID: #278)
  Andrzej Pownuk and Vladik Kreinovich

10:40–12:00, Wednesday 28, Room 305, P-2 Applications 1 (Chair: Pakizar Shamoi)

- On Performance vs. Risk Trade-off in Feature Selection (Paper ID: #289)
  Peipei Chen, Anna Wilbik and Uzay Kaymak
- A Bottom-Up Approach to Perceptual Illusions Using Self-Organized Slowing Down (Paper ID: #250)
  Miki Hirabayashi and Hirotada Ohashi
- Maximization of Returns under a Value-at-Risk Constraint in Fuzzy Asset Managemen (Paper ID: #84)
  Yuji Yoshida
- Optimal facility location problem under possibility chance constraint conditions and barriers (Paper ID: #152)
  Hiroaki Ishii
- On category of quantale semimodules (Paper ID: #128)
  Mahesh Dubey and S. P. Tiwari

13:00–14:00, Wednesday 28, Piazza Hall, Plenary Talk 2 (Chair: Susana Montes)

- Statistical Decision-Making in Mixed Models of Uncertainty
  Dan Ralescu

14:20–15:20, Wednesday 28, Room 203, SS-02-2 Uncertainty Handling in Recommender and Decision Support Systems (Chair: Trevor Martin)

- A Mixture Model Approach to Utilizing Published Decision Rules (Paper ID: #174)
  Motoyuki Oki and Masahiro Inuiguchi
- An axiomatic approach to the estimation of interval-valued preferences in multi-criteria decision modeling (Paper ID: #181)
  Camilo Franco, Jens L. Hougaard and Kurt Nielsen

- Multi-criteria decision analysis based on hesitant fuzzy linguistic term sets: Application in photovoltaic technologies assessment (Paper ID: #200)
  Hamza Sellak, Brahim Ouhbi and Bouchra Frikh

14:20–16:00, Wednesday 28, Room 204, SS-13-2 Image Processing and Computer Vision using Fuzzy Techniques (Chair: Aránzazu Jurío)

- Generalizing an Interval-Valued Image Magnification Algorithm Using Homogeneity Measures and Interval Fusion Functions (Paper ID: #183)
  Daniel Paternain, Aránzazu Jurío, Miguel Pagola, Edurne Barrenechea and Humberto Bustince
- Image inpainting using colour and gradient features (Paper ID: #192)
  Aránzazu Jurío, Daniel Paternain, Javier Fernandez, Laura De Miguel and Humberto Bustince
- Non-Linear Scale-Space based on Fuzzy Sharpening (Paper ID: #194)
  Carlos Lopez Molina and Nicolás Madrid
- An Iterative Algorithm for Image Inpainting Using Aggregation Functions (Paper ID: #198)
  Manuel González-Hidalgo, Sebastia Massanet, Arnau Mir and Daniel Ruiz-Aguilera
- Preliminary study on an improved weight updating for fuzzy c-means with applications to image segmentation (Paper ID: #244)
  Deeptha Girish, Vineeta Singh and Anca Ralescu

14:20–16:00, Wednesday 28, Room 205, SS-04-2 Fuzzy and Intelligent Systems (Chair: Shun-Feng Su)

- A Design of Uncertainty Trajectory Observer for a Class of T-S Fuzzy Models (Paper ID: #34)
  Hugang Han and Daisuke Hamasaki
- Design of Self-Constructing Fuzzy Wavelet Neural Control System (Paper ID: #116)
  Tsu-Tian Lee, Po-Chun Wang, Chun-Fei Hsu and Chih-Ching Hsiao
- An Obstacle Avoidance of Large-Scale Indoor Tricycle Drive Cleaning Robot Using Laser Scanner (Paper ID: #133)
  Hsin-Yi Huang, Yun-Wen Hu, Meng-Fang Lu, Song-Shyong Chen, Jin-Tsong Jeng and Wen-Ping Chen
- Tuning of Fuzzy Rules with a Real-coded Genetic Algorithm in Car Racing Game (Paper ID: #167)
  Akifumi Ise, Motohide Umano and Noriyuki Fujimoto
- Emotional Action Generation Model Supporting Real-time Operation (Paper ID: #173)
  Takanori Nakamura, Hiroshi Takenouchi and Masataka Tokumaru

14:20–15:00, Wednesday 28, Room 206, SS-32-2 Brain Engineering for Soft Behavior (Chair: Suguru N. Kudoh)

- Fuzzy Logic Training for Sleep Apnea Classification (Paper ID: #203)
  Douglas E. Dow and Isao Hayashi
- Robust Directional-Diffusive Hybrid Molecular Communication with Parity-check Erasure Coding (Paper ID: #191)
  Hiroaki Egashira, Junichi Suzuki, Jonathan Mitzman, Tadashi Nakano and Hiroaki Fukuda

15:00–16:00, Wednesday 28, Room 206, SS-16 Fuzzy Robotic Systems (Chair: Suguru N. Kudoh)

- An In-Car Camera System for Traffic Sign Detection and Recognition (Paper ID: #125)
  Shu-Chun Huang, Huei-Yung Lin and Chin-Chen Chang

- PSO-based Fuzzy Control of a Self-Balancing Two-Wheeled Robot (Paper ID: #211)
  Gwo-Ruey Yu, Yuan-Kai Leu and H.-T. Huang
- Evolutionary Fuzzy Control of Two Cooperative Object-Carrying Wheeled Robots for Wall Following Through Multiobjective Continuous ACO (Paper ID: #212)
  Chen-An Huang and Chia-Feng Juang

14:20–15:20, Wednesday 28, Room 207, SS-09 Medical and Healthcare Engineering (Chair: Senaka Amarakeerthi)

- A Development of Measurement System for Walking with Turning Using 6-axis Inertial Sensors and Its Reliability Evaluation (Paper ID: #27)
  Yuki Azuma, Kouki Nagamune and Ryosuke Kuroda
- Nursing-care Text Classification using Word Vector Representation and Convolutional Neural Networks (Paper ID: #126)
  Manabu Nii, Yuya Tsuchida, Yusuke Kato, Atsuko Uchinuno and Reiko Sakashita
- Modelling a Fuzzy Rule-based Expert System combining Positive and Negative Knowledge for Medical Consultation using the importance of Symptoms (Paper ID: #164)
  Thi Nu Mai, Hoang Phuong Nguyen and Kaoru Hirota

15:20–16:00, Wednesday 28, Room 207, SS-15 Cognitive Human-Computer Interaction (Chair: Senaka Amarakeerthi)

- BCI-Based Alcohol Patient Detection (Paper ID: #226)
  Vinothraj Thangarajah, Denshiya Dominic Alfred, Senaka Amarakeerthi and Jayalath Ekanayake
- A Brain Signal-Based Credibility Assessment Approach (Paper ID: #230)
  Samadara Dhanapala, Thilini Bakmeedeniya, Senaka Amarakeerthi, Sagara Sumathipala and Prasad Jayaweera

14:20–16:00, Wednesday 28, Room 302, SS-28 Fuzziness in Massive Data (Chair: Luigi Troiano)

- Which Players will Leave Their Community? Predicting Guild Abandonments in World of Warcraft Game Data (Paper ID: #12)
  Gergely Posfai, Gabor Magyar and Laszlo T. Koczy
- Joining Fuzzy Transform and Local Learning for Wind Power Forecasting (Paper ID: #123)
  Vincenzo Loia, Stefania Tomasiello and Alfredo Vaccaro
- Using Automatic Speech Processing to Analyze Fundamental Frequency of Child-Directed Speech Stored in a Very Large Audio Corpus (Paper ID: #104)
  Paul De Palma and Mark Van Dam
- Application of Regression Driven F–Transform to Smoothing of Financial Time Series (Paper ID: #241)
  Luigi Troiano, Pravesh Kriplani and Irene Díaz
- An Alternative Estimation of Market Volatility based on Fuzzy Transform (Paper ID: #239)
  Luigi Troiano, Elena Mejuto Villa and Pravesh Kriplani

14:20–16:00, Wednesday 28, Room 303, G-1 Methods (Chair: Weldon A. Lodwick)

- Fuzzy Measure Identification Methods for a Multi-level Hierarchy Diagram by Assignment Functions (Paper ID: #59)
  Eiichiro Takahagi

- Principal Component Analysis Approach in Selecting Type-1 and Type-2 Fuzzy Membership Functions for High-dimensional Data (Paper ID: #163)
  Desh Raj, Aditya Gupta, Kenil Tanna, Bhuvnesh Garg and Frank Rhee
- Behavioral Analysis of Fuzzy Cognitive Map Models by Simulation (Paper ID: #62)
  Miklós F. Hatwágner, Vesa A. Niskanen and László T. Kóczy
- Multi-Scale Compressive Tracking (Paper ID: #129)
  Chi-Yi Tsai, Yen-Chang Feng and Zih-Syuan Jhang
- Visualization of Two-dimensional Interval Type-2 Fuzzy Membership Functions using General Type-2 Fuzzy Membership Functions (Paper ID: #180)
  Rishav Chourasia, Vaibhav Saxena, Nikhil Yadala and Frank Chung-Hoon Rhee

14:20–16:00, Wednesday 28, Room 304, G-2 Aggregation and summarization (Chair: Ivan Palomares Carrascosa)

- A Fuzzy Multicriteria Aggregation method for Data Analytics: application to Insider Threat Monitoring (Paper ID: #87)
  Iván Palomares, Harsha Kalutarage, Yan Huang, Paul Miller, Robert McCausland and Gavin McWilliams
- Some results on aggregation for fuzzy classification (Paper ID: #207)
  José Carlos R. Alcantud, Susana Díaz and Susana Montes
- A similarity classifier with generalized ordered weighted averaging operator (Paper ID: #35)
  Onesfole Kurama, Pasi Luukka and Mikael Collan
- Similarity of histograms and circular histograms from interval and fuzzy data (Paper ID: #150)
  Jozsef Mezei, Pasi Luukka and Mikael Collan
- A Novel Approach to Noise Clustering in Multivariate Fuzzy c-Means (Paper ID: #231)
  Katsuhiro Honda, Seiki Ubukata and Akira Notsu

14:20–16:00, Wednesday 28, Room 305, P-3 Theory 2 (Chair: Marek Reformat)

- Knowledge Graphs and Fuzziness: Categorical Approach (Paper ID: #290)
  Marek Reformat
- From Fuzzy Universal Approximation to Fuzzy Universal Representation: It All Depends on the Continuum Hypothesis (Paper ID: #261)
  Mahdokht Afravi and Vladik Kreinovich
- Fuzzy Sets As Strongly Consistent Random Sets (Paper ID: #260)
  Kittawit Autchariyapanitkul, Hung Nguyen and Vladik Kreinovich
- On Fuzzy 'alpha' Hyper-connectedness In Fuzzy Topological Spaces (Paper ID: #279)
  Dipankar De

Technical Program on Thursday 29

Full Paper Presentation: 20 min (including discussions)
Position Paper Presentation (its session ID begins with 'P-'): 15 min (including discussions)
Poster Presentation Core Time: 15:00–16:00, 29 June 2017.

9:00–10:00, Thursday 29, Piazza Hall, Plenary Talk 3 (Chair: Masafumi Hagiwara)

- Knowing Sensitivity and Intelligence from the Viewpoint of System and Design
  Hisao Shiizuka

10:20–12:00, Thursday 29, Room 203, SS-11-1 Soft Computing Techniques for Machine Learning (Chair: Mikel Galar)

- Associated Multi-label Fuzzy-rough Feature Selection (Paper ID: #48)
  Yanpeng Qu, Rong Yu, Anshdeng Deng and Longzhi Yang
- A calibration with an adaptive data selection based on Bayes estimation for a successive stochastic approximation ADC (Paper ID: #135)
  Keiji Tatsumi, Toshimasa Matsuoka and Sadahiro Tani
- An Integrated Method for Mining Association and Sequential Rules in the Distributed Databases (Paper ID: #144)
  Jih-Jeng Huang
- Michigan-style Fuzzy GBML with (1+1)-ES Generation Update and Multi-Pattern Rule Generation (Paper ID: #243)
  Yusuke Nojima, Shuji Takemura, Kazuhiro Watanabe and Hisao Ishibuchi
- Supervised Semi-Autoencoder Learning for Multi-Layered Neural Networks (Paper ID: #30)
  Ryotaro Kamimura and Haruhiko Takeuchi

10:20–12:00, Thursday 29, Room 204, SS-05-1 Robotic and Embedded Systems (Chair: Marek Reformat)

- Adaptive PD Networks Tracking Control with Full-State Constraints for Redundant Parallel Manipulators (Paper ID: #20)
  Van-Truong Nguyen, Chyi-Yeu Lin, Shun-Feng Su, Ngoc-Quan Nguyen and Quoc-Viet Tran
- Real Time Human Tracking Using Improved CAM-Shift (Paper ID: #21)
  Ngoc-Quan Nguyen, Shun-Feng Su, Van-Truong Nguyen, Quoc-Viet Tran and Jin-Tsong Jeng
- Real-Time Non-contact Breath Detection from Video using Adaboost and Lucas-Kanade algorithm (Paper ID: #25)
  Quoc-Viet Tran, Shun-Feng Su, Chen-Chia Chuang, Van-Truong Nguyen and Ngoc-Quan Nguyen
- Learning Based Semantic Segmentation for Robot Navigation in Outdoor Environment (Paper ID: #69)
  Janice Lin, Hsiang-Chieh Chen, Sheng-Kai Huang and Wen-June Wang
- Reproducible Large-Scale Social Simulations on Various Computing Environment (Paper ID: #220)
  Takuya Harada and Tadahiko Murata

10:20–12:00, Thursday 29, Room 205, SS-27-1 F-transforms: Bridging Theory and Applications (Chair: Irina Perfilieva)

- Time Series Clustering using Numerical and Fuzzy Representations (Paper ID: #80)
  Tatyana Afanaseva, Nadezhda G. Yarushkina and Ivan Sibirev
- Developing a system for time series data mining on the basis of F-transform and the domain-specific ontology (Paper ID: #86)
  Nadezhda G. Yarushkina, Aleksey A. Filippov, Vadim S. Moshkin, Anton A. Romanov and Eugeny N. Egov

- M-estimators using optimization algorithm based on F-transform (Paper ID: #97)
  Jin Hee Yoon, Deokhwan Kyeong and Kisung Seo
- Tectogrammatical Trees and Fuzzy Natural Logic in Linguistic Characterization of Dynamic Processes (Paper ID: #107)
  Vilem Novak
- On residuated lattice based fuzzy variable precision F-transform (Paper ID: #120)
  Anand Pratap Singh and S. P. Tiwari

10:20–12:00, Thursday 29, Room 206, SS-20-1 Recent Trends of Clustering Methodologies (Chair: Katsuhiro Honda)

- Hierarchical clustering algorithms with automatic estimation of the number of clusters (Paper ID: #13)
  Ryosuke Abe, Sadaaki Miyamoto, Yasunori Endo and Yukihiro Hamasuna
- Visual Assessment of Co-cluster Structure through Cooccurrence-Sensitive Ordering (Paper ID: #50)
  Katsuhiro Honda, Takuya Sako, Seiki Ubukata and Akira Notsu
- Controlled-sized Clustering Based on Optimization (Paper ID: #55)
  Yasunori Endo, Sachiko Ishida and Naohiko Kinoshita
- Possibilistic Co-clustering Based on Extension of Noise Rejection Scheme in FCCMM (Paper ID: #93)
  Seiki Ubukata, Katsuya Koike, Akira Notsu and Katsuhiro Honda
- A Study on Cluster Validity Measures for Clustering Network Data (Paper ID: #89)
  Yukihiro Hamasuna, Ryo Ozaki and Yasunori Endo

10:20–12:00, Thursday 29, Room 207, SS-10-1 Aggregation Functions: Theory and Practice (Chair: Humberto Bustince)

- New Results on Pre-aggregation functions: introducing (light) pre-t-norms (Paper ID: #43)
  Graçaliz Dimuro, Humberto Bustince, Javier Fernandez, Radko Mesiar and Benjamin Bedregal
- Pseudo Strong Equality Indices for Interval-Valued Fuzzy Sets with respect to Admissible Orders (Paper ID: #71)
  Laura De Miguel Turullols, Mikel Sesma-Sara, Javier Fernandez, Carlos Lopez-Molina, Humberto Bustince and Maria Jose Asiain
- Averaging Aggregation Functions Based on Inclusion-exclusion Integrals (Paper ID: #74)
  Aoi Honda and Simon James
- The role of betweenness relations, monometrics and penalty functions in data aggregation (Paper ID: #108)
  Raúl Pérez-Fernández and Bernard De Baets
- Aggregation tools for the evaluation of classifications (Paper ID: #130)
  Fabian Castiblanco, Daniel Gomez, Javier Montero and J. Tinguaro Rodriguez

10:20–12:00, Thursday 29, Room 302, SS-01-1 Fuzzy Optimization and Decision Making: Theory, Algorithms, and Applications (Chair: Weldon A. Lodwick)

- Hybrid Swarm Model with Changing Agent of Particle Swarm and Firefly (Paper ID: #218)
  Heng Xiao and Toshiharu Hatanaka
- Individual Relative Assessment Based on Interval AHP with Interval Comparisons Based on DEA (Paper ID: #39)
  Tomoe Entani

- On the Design of Similarity Measures Based on Fuzzy Integral (Paper ID: #95)
  Jaehoon Cha, Sanghyuk Lee, Kyeong Soo Kim and Witold Pedrycz
- Interval Type 2 Fuzzy Sets Multiple Criteria Decision Making Based on Quantifier Guided Aggregation Ordered Weighted Averaging Operator (Paper ID: #47)
  Kuo-Ping Chiao
- On Fuzzy $\Gamma^{\star}$-Locally Closed Sets and Their Applications (Paper ID: #42)
  Baby Bhattacharya, Jayasree Chakraborty, Arnab Paul and G. Sree Anusha

10:20–12:00, Thursday 29, Room 303, G-3 Infrastructure and society (Chair: Tomonori Hashiyama)

- Reflective Multi-agent Model Using Semantic Similarity Measure and Negotiation Protocol for Solving Heterogeneity (Paper ID: #1)
  Dhouha Ben Noureddine, Atef Gharbi and Samir Ben Ahmed
- Fuzzy Techniques Explain Empirical Power Law Governing Wars and Terrorism (Paper ID: #4)
  Hung Nguyen, Kittawit Autchariyapanitkul and Vladik Kreinovich
- Which Material Design Is Possible Under Additive Manufacturing: A Fuzzy Approach (Paper ID: #109)
  Francisco Zapata, Olga Kosheleva and Vladik Kreinovich
- Fault Classification on the Hybrid Transmission Line System Between Overhead Line and Underground Cable (Paper ID: #161)
  Jittiphong Klomjit and Atthapol Ngaopitakkul

10:20–12:00, Thursday 29, Room 304, P-4 Decision and analysis (Chair: Feliz Jimenez)

- Rough set in imperfect decision systems (Paper ID: #252)
  Thinh Cao, Koichi Yamada, Muneyuki Unehara, Izumi Suzuki and Do Van Nguyen
- Interval valued fuzzy soft sets in decision making based on game theory and their applications (Paper ID: #276)
  Anjan Mukherjee
- Design of Event Analysis System using K-means Clustering (Paper ID: #265)
  Jung-Sook Kim
- Classification of Urban Health Patterns using Fuzzy Cluster Analysis (Paper ID: #98)
  Takamasa Akiyama and Hiroaki Inokuchi

10:20–12:00, Thursday 29, Room 305, P-5 Applications 2 (Chair: Koji Murai)

- SIFT Limitations in Sub-image Searching (Paper ID: #264)
  Petr Hurtik, Petra Števuliáková and Irina Perfilieva
- Influences on TMS-induced fNIRS signal by the watching of exercise-movement (Paper ID: #154)
  Sayaka Morishita, Hidekatsu Ito and Suguru N. Kudoh
- Design of Communication Relay System for Safe Navigation of Unmanned Surface Vehicle (Paper ID: #282)
  Ho Namgung and Jung Sik Jeong
- Contrasting High Arousal Emotions: A BCI-Based Approach (Paper ID: #225)
  Kasun Kuruppu, Senaka Amarakeerthi, Chinthaka Premachandra and Liyanage De Silva

13:00–13:40, Thursday 29, Room 203, SS-11-2 Soft Computing Techniques for Machine Learning (Chair: Mikel Galar and Yoshiyuki Yabuuchi)

- IVOVO: A new Interval-Valued One-Vs-One approach for multi-class classification problems (Paper ID: #124)
  Mikel Elkano, Mikel Galar, José Antonio Sanz Delgado, Giancarlo Lucca and Humberto Bustince
- Time-series data visualization by autoregressive GPDM (Paper ID: #64)
  Nobuhiko Yamaguchi

13:40–14:40, Thursday 29, Room 203, SS-22 Application to Business (Chair: Mikel Galar and Yukio Kodono)

- Management Decision by Combination Two-level DEA and Kernel-based Mechanism (Paper ID: #44)
  Fu-Hsiang Chen, Jhih-Hong Zeng, Ming-Fu Hsu and Sin-Jin Lin
- Time Series Data Analysis by Rough Set and Merging Method of Decision Rule (Paper ID: #90)
  Yoshiyuki Matsumoto and Junzo Watada
- The Difference between the Formulations of Possibilistic Robust Regression Model (Paper ID: #102)
  Yoshiyuki Yabuuchi

13:00–14:40, Thursday 29, Room 204, SS-05-2 Robotic and Embedded Systems (Chair: Vladik Kreinovich)

- Motion Planning and Control of a Picture-Based Drawing Robot System (Paper ID: #117)
  Chun-Fei Hsu, Wei-Heng Kao, Wei-Yu Chen and Kai-Yi Wong
- Intelligent Control for a Dynamically Stable Two-Wheel Mobile Manipulator (Paper ID: #118)
  Wei-Fu Kao, Chun-Fei Hsu and Tsu-Tian Lee
- A Simplified Interval Type-2 Fuzzy CMAC (Paper ID: #121)
  Chia-Wen Chang, Wen-Rong Xiao, Chih-Ching Hsiao, Song-Shyong Chen and Chin-Wang Tao
- Constrained Fuzzy Stabilization for Mobile Robots with Laser-Range-Finder Localization (Paper ID: #132)
  Chung-Hsun Sun, Hsuan Chen and Hsiang-Chieh Chen
- Adaptive Navigation and Motion Planning for a Track Robot (Paper ID: #222)
  B. H. Sudantha, Sagara Sumathipala, Chinthaka Premachandra, Kolitha Warnakulasooriya, Elvitigala Sandaru and Pansilu Jayasuriya

13:00–13:40, Thursday 29, Room 205, SS-27-2 F-transforms: Bridging Theory and Applications (Chair: Vilem Novak and Byung-Jae Choi)

- Drone real-time control based on pattern matching (Paper ID: #146)
  Marek Vajgl, Petr Hurtik and Petra Števuliáková
- Shooting Method Based on Higher Degree F-transform (Paper ID: #215)
  Irina Perfilieva, Petra Števuliáková and Radek Valášek

13:40–14:40, Thursday 29, Room 205, SS-26 Theoretical Applications of Fuzzy Logic (Chair: Vilem Novak and Byung-Jae Choi)

- Chaotic behavior in love affairs of fractional order with fuzzy membership function as an external force (Paper ID: #52)
  Linyun Huang and Youngchul Bae
- Improved Stability Condition for Fuzzy Systems with Interval Time Varying Delay (Paper ID: #114)
  Rupak Datta, Rajeeb Dey, Baby Bhattacharya and Abanishwar Chakraborti
- Application of Multi-agent Control Systems in Energy-Efficient Intelligent Building (Paper ID: #214)
  Young Im Cho, Aigerim Altayeva, Batyrkhan Omarov and Zharas Suleimenov

13:00–13:40, Thursday 29, Room 206, SS-20-2 Recent Trends of Clustering Methodologies (Chair: Jung Sik Jeong)

- Learning Prototype-based Classifiers by Margin Maximization (Paper ID: #81)
  Chiharu Wakou, Yoshifumi Kusunoki and Keiji Tatsumi
- Trajectory clustering using a new distance based on minimum convex hull (Paper ID: #147)
  Xu Gao and Fusheng Yu

13:40–14:40, Thursday 29, Room 206, SS-25 Intelligent Systems and Applications (Chair: Jung Sik Jeong)

- Automatic Brightness Adjustment System by Fuzzy Inference System for Object Recognition (Paper ID: #54)
  Eun Kyeong Kim, Hyunhak Cho, Hansoo Lee and Sungshin Kim
- Integration of Improved GRBFN with Fuzzy Clustering for Electricity Price Forecasting (Paper ID: #171)
  Hiroyuki Mori and Satoshi Itaba

13:00–13:40, Thursday 29, Room 207, SS-10-2 Aggregation Functions: Theory and Practice (Chair: Javier Montero and Michal Baczynski)

- On Generalized Mulholland Inequality and Dominance on Nilpotent Triangular Norms (Paper ID: #137)
  Milan Petrík
- Multi-objective optimization for OWA filters on SAR imagery (Paper ID: #177)
  Roberto Galski, Leonardo Torres, José Carlos Becceneri, Sandra Sandri, Corina Freitas and Sidnei Santanna

13:40–14:40, Thursday 29, Room 207, SS-08 Fuzzy Implication Functions (Chair: Javier Montero and Michal Baczynski)

- On Fuzzy Implication Functions Defined Using Powers of Continuous t-norms (Paper ID: #70)
  Sebastia Massanet, Jordi Recasens and Joan Torrens
- On some constructions of ordinal sums of fuzzy implications (Paper ID: #179)
  Paweł Drygaś and Anna Król
- Some New Solutions of the Distributivity Law $I(x, S(y, z)) = S(I(x, y), I(x, z))$ among R-implications and Triangular Conorms (Paper ID: #227)
  Wanda Niemyska and Michal Baczynski

13:00–14:40, Thursday 29, Room 302, SS-01-2 Fuzzy Optimization and Decision Making: Theory, Algorithms, and Applications (Chair: Weldon A. Lodwick)

- Bilevel Linear Programming with Lower-Level Fuzzy Objective Function (Paper ID: #101)
  Puchit Sariddichainunta and Masahiro Inuiguchi
- Fuzzy Systems Modeling with Participatory Search Algorithm (Paper ID: #141)
  Yi Liu and Fernando Gomide
- Non-parametric Interval Weight Estimation Methods from a Crisp Pairwise Comparison Matrix (Paper ID: #159)
  Masahiro Inuiguchi and Shigeaki Innan
- Swarm Fuzzy-Reinforcement Coordination using Bloom's Taxonomy of the Cognitive Domain (Paper ID: #204)
  Nasibeh Rady Raz and Mohammad-R. Akbarzadeh-T.

13:00–14:40, Thursday 29, Room 303, G-4 Education and networking (Chair: Atsushi Inoue)

- Multi-Agent Approach for Resilience Enhancement in Wireless Sensor and Actuator Networks (Paper ID: #36)
  Fábio Januário, Alberto Cardoso and Paulo Gil
- Improving Fuzzy FMEA Model for Student Projects (Paper ID: #88)
  Issarapong Khuankrue, Fumihiro Kumeno, Yutaro Ohashi and Yasuhiro Tsujimura
- Vocabulary Elicitation for Informative Descriptions of Classes (Paper ID: #134)
  Gregory Smits, Olivier Pivert and Marie-Jeanne Lesot
- ANFIS Application to Infer Student Performance in English Learning Using Affective Factors (Paper ID: #186)
  Fitra Bachtiar, Gunadi Sulistyo, Eric Cooper and Katsuari Kamei
- If I don't know, should I infer? Reasoning around ignorance in a many-valued framework (Paper ID: #238)
  Adrien Revault d'Allonnes and Marie-Jeanne Lesot

13:00–14:40, Thursday 29, Room 304, P-6 Learning (Chair: Yusuke Nojima)

- The Multifaceted Evaluation of Regional Health with Neural Network Model (Paper ID: #99)
  Hiroaki Inokuchi and Takamasa Akiyama
- Breast Cancer Classification using Radial Basis Function Neural Network (RBFNN) Model: A Comparative study of K-Means and Fuzzy c-Means Clustering Methods (Paper ID: #115)
  Dhoriva Urwatul Wutsqa and Aziza Ratna Kumala
- Development of Support Vector Regression models for monitoring of stem cells cultivation process (Paper ID: #251)
  Vytautas Galvanauskas, Tomas Tekorius and Rimvydas Simutis
- Disease Stage Classification for Glioblastoma Multiforme Histopathological Images using Deep Convolutional Neural Network (Paper ID: #270)
  Asami Yonekura, Hiroharu Kawanaka, Surya Prasath, Bruce Aronow and Haruhiko Takase
- Applying the Concept of Fuzzy for Inverse Reinforcement Learning (Paper ID: #254)
  Kao-Shing Hwang, Wei-Cheng Jiang, Yi-Yun Cho and Chi-Yuan Tai
- Forward Variance Potentiality to Connect Hidden Layers in Multi-Layered Neural Networks (Paper ID: #280)
  Ryotaro Kamimura and Ruka Nakajima

13:00–14:40, Thursday 29, Room 305, P-7 Applications 3 (Chair: Koji Murai)

- Multi-Agent Simulation of Promoting Clean Energy Vehicle for Evaluation of Policies (Paper ID: #158)
  Masashi Okushima
- A Fuzzy Pose Estimator by Integrating Vision and Distance Sensor based SLAM (Paper ID: #263)
  Yi-Bin Lin, Chih-Yin Liu, Chung-Lin Lee, Cheng-Hui Li and Tzuu-Hseng S. Li
- Parallel Computing for Reconstructing Large-Scale Household Composition from Statistics for Agent-Based Social Simulations (Paper ID: #210)
  Takuya Harada and Tadahiko Murata
- Optimal Genetic Fuzzy Control for Multiple Wheeled Robots (Paper ID: #255)
  Sendren Sheng-Dong Xu, Yu-Chieh Kung, Hsu-Chih Huang and Wei-En Hsu

15:00–16:20, Thursday 29, Meeting Hall, Poster (Chair: Junji Nishino)

- Detection of Inadequate Descriptions in Wikipedia using Information Extraction based on Word Clustering (Paper ID: #61)
  Hokuto Akano, Masaki Murata and Qing Ma
- UniProt protein sequence data classification using genetically-optimized fuzzy rule-based systems (Paper ID: #131)
  Marian B. Gorzalczany and Filip Rudzinski
- 6-DoF Planar Pose Estimation Based on a Real-Time Template Tracking Algorithm (Paper ID: #160)
  Chi-Yi Tsai, Kuang-Jui Hsu and Ting-Yuan Liu
- Fast and Reliable Iris Detection by Boundary Tracing (Paper ID: #65)
  Katsuki Tozawa, Riki Ishikawa and Tomohiko Ohtsuka
- Effects of Varying Accuracy Rate of a Robot in Collaborative Learning with Humans (Paper ID: #105)
  Felix Jimenez, Tomohiro Yoshikawa, Takeshi Furuhashi and Masayoshi Kanoh
- Optimization of Location Problem for Power Flow Controller (Paper ID: #110)
  Takayuki Shiina, Susumu Morito, Jun Imaizumi and Chunhui Xu
- A Study on EEG-based Emotion Recognition using Averaging Process (Paper ID: #142)
  Yuuki Noro, Tomohiro Yoshikawa and Takeshi Furuhashi
- Parameter Estimation Model from Questionnaire for Multi-agent Simulation Model of Urban Traffic (Paper ID: #166)
  Takuya Matsumoto, Atsushi Sakai, Yuya Morinaga, Kazutoshi Sakakibara, Makoto Ohara and Hisashi Tamaki
- Effects of Meaningful or Meaningless Noise on Selective Attention to Auditory Cognitive Task (Paper ID: #206)
  Takahiro Tamesue
- Reason Maintenance Belief Logic based on Information Fusion (Paper ID: #246)
  Tuan-Fang Fan and Churn-Jung Liau
- Use of Web Search Engines in TF-IDF based Word Network Construction for Extracting Useful Information (Paper ID: #247)
  Takashi Kamihigashi, Masaki Murata and Qing Ma

- Is Confirmation Bias Related to the Number of Recalled Happy Events? If so, How? (Paper ID: #249)
  Kazunori Fujimoto, Masaaki Fuse, Shunichiro Sasaki, Shoko Yamane and Grzegorz Mardyla
- Building a fuzzy model for currency option pricing (Paper ID: #259)
  Zhang Huiming and Junzo Watada
- Color Aesthetics: Fuzzy based User-driven Method for Harmony and Preference Prediction (Paper ID: #268)
  Pakizar Shamoi, Atsushi Inoue and Hiroharu Kawanaka
- Design of Fuzzy Logic System for Hovering Control of Quad-Copter (Paper ID: #275)
  Hyun-Ho Yoo, Hansang Kim and Byung-Jae Choi
- An approach to derivation method of the "Group Egogram" (Paper ID: #283)
  Makoto Ohki
- Prototype Development of Graphics Editor Available for Blind People and the Experiment of a Blind Person (Paper ID: #284)
  Yuji Masaki, Noboru Takagi and Tatsuo Motoyoshi
- Interactive Evolutionary Computation Method using Disliked Individual Selection (Paper ID: #285)
  Yusuke Soga, Hiroshi Takenouchi and Masataka Tokumaru
- Utilization of Rough Sets for Intrusion Detection (Paper ID: #286)
  Ahmed Nasser, Hayri Sever and Vijay Raghavan
- Artificial Intelligence Literacy: Simulation, ELIZA and Skit (Paper ID: #292)
  Bobby Johnson, Stephen Shervais, Debra Morgan and Atsushi Inoue
- Evolutionary Training of Autoencoders by Genetic Algorithm (Paper ID: #248)
  Hidehiko Okada
- User Simulation to Inspect Menu Hierarchy Design Using Information Scent Model (Paper ID: #266)
  Yukio Horiguchi, Naoki Kojima, Tetsuo Sawaragi and Hiroaki Nakanishi

Technical Program on Friday 30

Full Paper Presentation: 20 min (including discussions)
Position Paper Presentation (its session ID begins with 'P-'): 15 min (including discussions)
Poster Presentation Core Time: 15:00–16:00, 29 June 2017.

9:20–11:00, Friday 30, Room 203, SS-31 Stochastic Optimization for Complex Adaptive Systems (Chair: Hiroshi Sato)

- Deep Convolutional Networks for Human Sketches by means of the Evolutionary Deep Learning (Paper ID: #219)
  Saya Fujino, Naoki Mori and Keinosuke Matsumoto
- A proposal of a low-dimensional approach based on DIRECT method and t-SNE for single optimization problems with many variables (Paper ID: #223)
  Takuya Kaihatsu and Shinya Watanabe
- Incremental Learning for SIRMs Fuzzy Systems by Adam method (Paper ID: #228)
  Shu Matsumura and Tomoharu Nakashima
- Estimating the Effect of an External Factor behind an Input-Output Table (Paper ID: #229)
  Kien Tran, Masao Kubo and Hiroshi Sato
- Performance Comparison of EMO Algorithms on Test Problems with Different Search Space Shape (Paper ID: #237)
  Yuki Tanigaki, Yusuke Nojima and Hisao Ishibuchi

9:20–11:00, Friday 30, Room 204, SS-03 Human Symbiotic Systems (Chair: Tomohiro Yoshikawa)

- Operating Instruction Method Based on EMG for Omnidirectional Wheelchair Robot (Paper ID: #53)
  Yoichiro Maeda and Shoji Ishibashi
- Estimation of User Location for Hearing-Dog Robot (Paper ID: #60)
  Hoshito Kudo, Satoshi Tanaka, Yukihiro Yoshida, Tsuyoshi Nakamura, Masayoshi Kanoh, Koji Yamada, Daimu Oiwa, Yuji Iwahori and Shinji Fukui
- A Study on Document Classification using Multiple Distributed Representations (Paper ID: #106)
  Koji Takuwa, Tomohiro Yoshikawa, Felix Jimenez and Takeshi Furuhashi
- Fuzzy emotional presentation system to enjoy watching baseball games (Paper ID: #188)
  Hirofumi Sato and Junji Nishino
- Multi-dimensional Fuzzy Set identification using Persistent Homology (Paper ID: #190)
  Takashi Harada and Junji Nishino

9:20–11:00, Friday 30, Room 205, SS-19 Human Centered Transportation Systems (Chair: Jung Sik Jeong)

- Toward Evaluation of Mixed Culture's Team Works – Case Study of Ship Bridge Simulator-based Training for Cadets – (Paper ID: #6)
  Koji Murai, Jie Wang, Yibing Wang and Yang Qilei
- Evaluation of Mental Workload for a Newly- Appointed Pilot Using Salivary NO_3- Concentration and LF/HF Values, Compared with Port-Coordinators (Paper ID: #19)
  Kenichi Kitamura, Koji Murai and Shin-Ichi Wakida
- Development of Maneuvering Support System for Ship Docking (Paper ID: #143)
  Tadatsugi Okazaki, Riku Kitagawa, Kazushi Matsubara and Hideyuki Kashima
- Effectiveness of the OZT taking into account with the Other Ships' Waypoints Information (Paper ID: #197)
  Jun Kayano and Kei Kumagai

9:20–11:00, Friday 30, Room 206, G-5 Business (Chair: Shun-Feng Su)

- Scheduling Divisible Loads on Heterogeneous Linear Networks Using Pipelined Communications (Paper ID: #26)
  Chi-Yeh Chen
- An Island-based Algorithm for Group Stock Portfolio Optimization (Paper ID: #77)
  Chun-Hao Chen, Wan-Yi Shen, Tzung-Pei Hong and Ja-Hwung Su
- An Extension of MOORA Approach for Group Decision Making based on Interval valued Intuitionistic Fuzzy Numbers in Digital Supply Chain (Paper ID: #83)
  Gulcin Buyukozkan and Fethullah Gocer
- A Novel Fuzzy Result Ranking Technique (Paper ID: #182)
  Christophe Billiet, Robin De Mol and Guy De Tre
- Dynamic Timetable Scheduling with Reverse-flow Technique in Fuzzy Environment (Paper ID: #233)
  Yanan Zhang, Zhaopeng Meng and Anca Ralescu

9:20–11:00, Friday 30, Room 207, P-8 Robots (Chair: Vilem Novak)

- Mobile Robot Navigation System Using Distributed Computing System Based on ROS Architecture (Paper ID: #288)
  Kai-Yeh Wei, Chen-Chien Hsu, Wei-Yen Wang and I-Hsum Lee
- Effective Maneuver and Control for Passive Robot Walking Helper Based on Foot Image (Paper ID: #262)
  Zih-Lun Huang, Chun-Hsu Ko and Kuu-Young Young
- A Novel Tracked Robot with Stairs Climbing Abilities Using Distributed Computing System Based on ROS (Paper ID: #277)
  Kai-Chun Yen, I-Hsum Lee, Yi-Hsing Chien, Wei-Yen Wang and Chen-Chien Hsu
- Adaptive Terminal Sliding-Mode Formation Control for Uncertain Networked Heterogeneous Swedish Wheeled Omnidirectional Robots Using Output Recurrent Fuzzy Wavelet Neural Networks (Paper ID: #281)
  Ching-Chih Tsai, Xing-Fu Wang and Feng-Chun Tai

9:20–11:00, Friday 30, Room 302, G-6 Theory (Chair: Hirosato Seki)

- Scaling-Invariant Description of Dependence Between Fuzzy Variables: Towards a Fuzzy Version of Copulas (Paper ID: #3)
  Gerardo Muela, Vladik Kreinovich and Christian Servin
- Towards Intuitionistic L-fuzzy Formal t-Concepts (Paper ID: #168)
  Ondrej Kridlo and Manuel Ojeda-Aciego
- Relational fuzzy Galois connections (Paper ID: #199)
  Inma P. Cabrera, Pablo Cordero and Manuel Ojeda-Aciego
- Solutions of fuzzy correspondence inequations with sup-conjunctor composition (Paper ID: #235)
  Kai Zuo, Xue-Ping Wang and Xiaohong Zhang

9:20–11:00, Friday 30, Room 303, P-9 Applications 4 (Chair: Masataka Tokumaru)

- Bayesian Network as a Modelling Tool for Increasing Knowledge on the Factors Influencing Vineyard Longevity and Sustainability (Paper ID: #253)
  Jelena Cosic, Steffen Klaere, Matthew Goddard and Bruno Fedrizzi
- Fuzzy ideals generated by fuzzy subsets of a quantale (Paper ID: #256)
  Xiaokun Huang and Qingguo Li
- Modeling of Behavior in Bus for Counting Multiple Passengers without Identification (Paper ID: #267)
  Tetsushi Minami and Kanta Tachibana
- Data-driven habitat modelling using high resolution ecohydraulic data in an agricultural canal (Paper ID: #271)
  Shinji Fukuda and Mitsuru Ohira
- A Case Study of Relationships Between Road Network Structures and OD Distributions (Paper ID: #287)
  Takeshi Uchitane

11:20–12:20, Friday 30, Meeting Hall, Legend Lecture (Chair: Dan Ralescu)

- Current Perspectives on Choquet Calculus
  Michio Sugeno

12:20–12:40, Friday 30, Meeting Hall, Award Ceremony

- Award Ceremony and Closing

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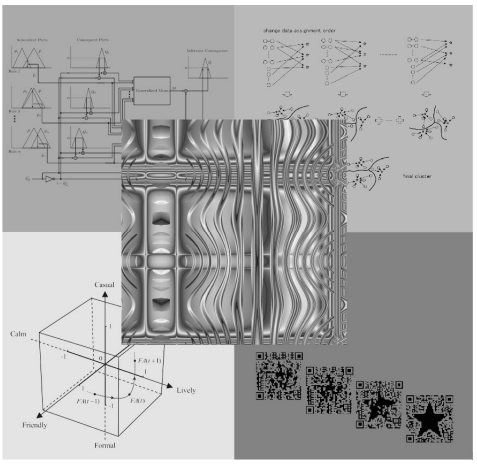

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Selected Papers from IFSA-SCIS2017 Conference will be published on JACIII Vol.22 No.4

►Important Dates

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IFSA-SCIS2017 Program at Glance

Tuesday June 27, 2017

16:00-16:20 **School@204**: **Opening Remarks**

16:30-18:00 **School@204**: **Class 1** (Fuzzy signatures for describing, manipulating and reasoning with uncertain, subjective and incomplete data, L. T. Koczy)

18:30-20:00 **Reception @ Meeting Hall**

School@204: (*Re-start around 19:40-) **Flush Talks of Students with Drink**

Wednesday June 28

9:00-9:20 **Welcome Address @ Piazza Hall**
9:20-10:20 **Plenary Talk 1** Pre-Aggregation Functions: Theory and Applications in Classification and Image Processing. Prof. Humberto Bustince

10:20-10:40 Coffee Break @ Meeting Hall

10:40-12:00 **Parallel Sessions 1**
SS-02-1 (203), SS-13-1 (204)
SS-04-1 (205), SS-32-1 (206)
SS-12 (207), SS-17 (302)
SS-21 (303), P-1 (304),
P-2 (305)

12:00-13:00 Lunch Break

13:00-14:00 **Plenary Talk 2 @ Piazza Hall**. Statistical Decision-Making in Mixed Models of Uncertainty. Prof. Dan Ralescu

14:00-14:20 Coffee Break @ Meeting Hall

14:20-16:00 **Parallel Sessions 2:**
SS-02-2 (203),
SS-13-2 (204),
SS-04-2 (205),
SS-32-2 SS-16 (206),
SS-09 SS-15 (207),
SS-28 (302), G-1 (303),
G-2 (304), P-3 (305)

16:30-18:00 **School@204**: **Class 2** (Human activity understanding and recognition, Md. A. R. Ahad)

17:50-20:00 **Trip for Japanese Local Cuisine (Optional)**

18:30-22:15 **School Dinner & Photo Session & Group Discussion @ Nagisa Terrace Colony**

Thursday June 29

9:00-10:00 **Plenary Talk 3 @ Piazza Hall**. Knowing Sensitivity and Intelligence from the Viewpoint of System and Design. Prof. Hisao Shiizuka

10:00-10:20 Coffee Break @ Meeting Hall

10:20-12:00 **Parallel Sessions 3:**
SS-11-1 (203),
SS-05-1 (204),
SS-27-1 (205),
SS-20-1 (206),
SS-10-1 (207),
SS-01-1 (302),
G-3 (303), P-4 (304),
P-5 (305)

12:00-13:00 Lunch Break

13:00-14:40 **Parallel Sessions 4:**
SS-11-2 SS-22 (203),
SS-05-2 (204),
SS-27-2 SS-26 (205),
SS-20-2 SS-25 (206),
SS-10-2 SS-08 (207),
SS-01-2 (302),
G-4 (303), P-6 (304),
P-7 (305)

14:40-15:00 Coffee Break @ Meeting Hall

15:00-16:20 **Poster & Futuristic Event @ Meeting Hall**
Poster session core time: 15:00-16:00

16:30-18:00 **School@204**: **Class 3** (Big Data Handling in Large Scale Social Simulation, T. Uchitane & T. Murata)

18:00-18:05 **Concluding Remarks**

19:00-21:30 **Banquet @ Royal Oak Hotel**

Friday June 30

9:20-11:00 **Parallel Sessions 5:**
SS-31 (203),
SS-03 (204),
SS-19 (205),
G-5 (206),
P-8 (207),
G-6 (302),
P-9 (303)

11:00-11:20 Coffee Break @ **Meeting Hall**

11:20-12:20 **Legend Lecture** Current Perspectives on Choquet Calculus. Prof. Michio Sugeno

12:20-12:40 **Award Ceremony**

Piazza Hall
Meeting Hall
Parallel session rooms
School event (only registered participants)
Optional excursion
Banquet (Notice: Place is a different hotel)

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