

# The 45<sup>th</sup> Symposium on Computer Technology of Information, Systems and Applications (AIJISA 2022)

<https://aijisa.org/2022/>

Architectural Institute of Japan  
Research Committee on Information Systems Technology

## ■Thinking on a global scale■

The Symposium on Computer Technology of Information, Systems and Applications (AIJISA) marks its 45th year. During this time, information and communication technology has come to play a major role in the architectural and urban fields.

Technologies and systems are evolving, including computational design, BIM, AI, IoT, XR, simulation, digital fabrication, i-Construction, and online communication. On the other hand, we also feel that we are about to be swallowed by the ever-growing digital “vortex”. How should we think about and work on how to develop human resources, respond to DX, contribute to the SDGs, information strategy, how to connect the digital world with the real world, and the division of roles between people and computers?

Thinking on a global scale. AIJISA 2022 will be an opportunity for participants to share, discuss, and deepen cutting-edge initiatives and issues.

Date: December 1 (Thu) and 2 (Fri), 2022

Venue: Kenchiku Kaikan, Tokyo / Online

Registration: [Official Web Site](#) (Advance application required)

Registration fees:

1) with digital proceedings

- AIJ member: JPY 8,000
- Non-member: JPY 10,000
- Student (AIJ member): JPY 5,000
- Student (Non-member): JPY 5,500

2) without digital proceedings

- Student: JPY 1,000
- You can attend all the program for two days by payment.
- At least, one presenter must pay by selecting 1) registration fee with digital proceedings.

Capacity: 120 persons at Kenchiku Kaikan, Tokyo, no capacity at online venue.

Contact: Architectural Institute of Japan, Mr. Takahata

TEL: +81-3-3456-2057, E-mail: [takahata@aij.or.jp](mailto:takahata@aij.or.jp)

## Program Overview

### 1. Opening Address

Shun WATANABE (University of Tsukuba)

Date & Time: December 1 (Thu), 9:30-9:45

### 2. Full & Short Papers /Interactive Presentation

#### Organized Session I

Design Science in Computational Intelligence and Architecture

#### Organized Session II

Virtual and Mixed Reality for Architectural and Urban Discipline 2022

#### Organized Session III

Geospatial Society and Regional Environment

#### Research Workshop

[Education for Digital Transformation in Architecture, Continued](#)

#### General Session

Algorithmic Design, Digital Fabrication, AI, Foot Traffic, Monitoring, and Simulation, Structure Optimization, City Planning and Space Syntax, XR, 3D Modeling, Green Building, BIM, GIS

### 3. Keynote

<Sponsors> APPLIED TECHNOLOGY CO., LTD., KOZO

KEIKAKU ENGINEERING Inc., Too Corporation (Co-exhibitor with Autodesk Inc.), TSUMIKISEISAKU, FORUM8 Co., Ltd., HoloLab Inc.

#### Considering the Era of Architectural DX

Date & Time: December 2 (Fri), 9:15-10:15

Keynote speech: Shigeru BAN (Shigeru Ban Architects)

Introduction: Naomi MATSUNAGA (Lemon Gasui)

#### Building Information Technology and the SDGs

Date & Time: December 2 (Fri), 15:00-17:30

Introduction: Narito KURATA (Tsukuba University of Technology)

Moderator: Shun WATANABE (University of Tsukuba)

Architecture x SDG: A User's Perspective on Transformation

Norichika KANIE (Keio University)

Contribution of Building Information Technology to the SDGs:

Thinking from the perspective of changing building production

Tsuyoshi SEIKE (The university of Tokyo)

### 4. Award Ceremony & Closing Address

Date & Time: December 2 (Fri), 17:30-17:50

### 5. Networking

#### Group photo

Date & Time: December 1 (Thu), 14:00 (Please be ready from 13:55)

Date & Time: December 2 (Fri), 14:50 (Please be ready from 14:45)

Place: in Person: AIJ Hall (please gather at the front); Online: Zoom-1 (turn on camera)

#### Get-together

Date & Time: December 1 (Thu), 18:00-20:00

How to Participate: Please register in advance (first-come-first-served basis) and pay the registration fee in cash at the registration desk of AIJISA 2022 in the foyer of the AIJ Hall.

Fee: General JPY 4,000; Students JPY 4,000

Capacity: 40 persons

#### Coffee break

Date & Time: December 1 (Thu), 12:30-13:00

Place: AIJ HALL Foyer

- The event will end when we run out of coffee.

#### SNS

- Taking photos and uploading them on the official website and SNS.

[Twitter](#), Hashtag ► [#AIJISA](#), [Facebook](#)

■ DAY1: Thursday, 1 Dec 2022 ■

**Hybrid ▼ Algorithmic Design**

10:00~11:00 Room1 (HALL) & Zoom-1

Chair: Kei YASUDA (Kyoto Univ.)

- 1 H12 A Creation Method of Komorebi Design Using Deep Learning and Evolutionary Algorithm  
○Jun TOBA (Chiba Univ.), Keita KADO
- 2 H66 Software Collaboration for Implementation of Complex Structural Analysis in the XR Environment  
○Naohiro KADOZUMI (Kyoto Institute of Technology), Eisuke MITSUDA
- 3 H111 Algorithms as Archetypes: The latent effects of AI to the creative process of architectural design  
○Melinda BOGNÁR (Budapest Univ. of Technology and Economics)
- 4 R26 Automatic Generation of 3D Building Models by Both Sides Extendable Quadrilateral Partitioning and Rectification  
○Kenichi SUGIHARA (Kanazawa Univ.), Zhenjiang SHEN, and Takahiro MURASE

**Hybrid ▼ Digital Fabrication**

11:15~12:15 Room1 (HALL) & Zoom-1

Chair: Toshifumi MAE (National Institute of Technology, Oita College)

- 5 H72 Research on 3D Printing Method for 3D Structural Joints Considering Material Anisotropy  
○Kazuho MIYAKE (Kyoto Institute of Technology), Eisuke MITSUDA
- 6 H74 A Study on 3D Printing Robot Considering Posture and Speed of Injection Volume During Modeling  
○Hiroki TAKAYAMA (Chiba Univ.), Gakuhiro HIRASAWA, Yuusuke NAKAMURA, and Yousuke NAKAO
- 7 H93 Experimental Machining of a Roof Corner of a Traditional Wooden Building Using a Multi-axis CNC Machine  
○Ganya SUDO (Chiba Univ.), Usuke NAKAMURA, and Gakuhiro HIRASAWA
- 8 R16 Mud Plastering with a Robot Arm Controlled by Paths Based on the Plasterers' Trowel Movements  
○Ikumi NOBORIO (Kyoto Institute of Technology), BANA Geregely Péter, Makoto MURAMOTO, and Tomomasa NISHIMURA

**Hybrid ▼ Interactive Sponsor Session**

13:00~14:00 Room1 (HALL) & Zoom-1

Chair: Keita KADO (Chiba Univ.), Tomohiro FUKUDA (Osaka Univ.)

- 9 I114 Implementation of Automatic Image Generation AI by Stable Diffusion and Application to Design Reference  
○Kouya INADA (Kyoto Univ.)
- 10 I115 Interactive Partition for Japanese Tea Room: Implementation of transparency-programable modules on Shoji  
○Naoki SHITANDA (Sony CSL Kyoto), Jun REKIMOTO
- 11 I119 Proposal for a Design Generation System for Immersive Virtual Environments Incorporating Physiological Responses: Development and application of breathing design system  
○Eriko KITAMOTO (Ritsumeikan Univ.), Satoshi YAMADA
- 12 I120 Application of Classifier with Deep Learning Which Uses 3D Data as Learning Data to Real Space: Individual identification of objects which have indistinguishable different parts for people  
○Hiroki OCHI (Ritsumeikan Univ.), Satoshi YAMADA

**Hybrid ▼ Research Workshop: Education for Digital Transformation in Architecture, Continued**

13:00~14:00 Room1 (HALL) & Zoom-1

Chair: Sou SUGITA (Hiroshima Institute of Technology), Yasunobu ONISHI (Kumamoto Univ.)

- 13 H25 BIM Data Sharing and Communication in the Integrated Design-Build Process: Current and future of information sharing based on cloud platform  
○Tetsuya MAEDA (TOYO CONSTRUCTION CO.)
- 14 H67 Consideration on the correlation between BIM Level 3 and Digitalize: The figure of BIM Level 3 and Digitalize that architectural practitioners aim for  
○Keisuke MITO (Shimizu Corporation)
- 15 H60 Construction DX and Higher Education from the View Point of Life

Cycle Consulting

○Kensuke YASUI (NIKKEN SEKKEI LTD.)

- 16 H69 Practical cases on Architectural Informatics Education for Architectural Digital Transformation (Part 1)  
○Keita KADO (Chiba Univ.), Yasunobu ONISHI, Takeshi KIMURA, Narito KURATA, Hideyuki SAWADA, Sou SUGITA, Yuichi SHIMOKAWA, Kiminori NAKAZAWA, Toshifumi MAE, Michio MATSUBAYASHI, Yuji MATSUMOTO, and Yasuhiko MORIYA
- 17 H70 Practical cases on Architectural Informatics Education for Architectural Digital Transformation (Part 2)  
○Yuichi SHIMOKAWA (Kanazawa Institute of Technology), Yasunobu ONISHI, Keita KADO, Takeshi KIMURA, Narito KURATA, Hideyuki SAWADA, Sou SUGITA, Kiminori NAKAZAWA, Toshifumi MAE, Michio MATSUBAYASHI, Yuji MATSUMOTO, and Yasuhiko MORIYA

**Hybrid ▼ AI**

10:00~11:00 Room2 (301+302) & Zoom-2

Chair: Satoshi YAMADA (Ritsumeikan Univ.)

- 18 H10 A Research on Deep Local Feature Description for Geometric Matching  
○Shuhei HORIE (Chiba Univ.), Keita KADO
- 19 H82 Automatic Generation of Drone Inspection Routes by Reinforcement Learning  
○Takumi SHIBATA (Ritsumeikan Univ.), Satoshi YAMADA
- 20 H90 Expansive Design of Contents Generation AI: Expansion of Cognition, Comparison of AI, Intension for Utilization  
○Mai HARADA (Ritsumeikan Univ.), Satoshi YAMADA
- 21 R103 Feature extraction of vibration modes of a pin-supported single-layer cylindrical reticulated shell  
○Masato KOYAMA (Toyohashi Univ. of Technology), Yuji TAKIUCHI, and Shoji NAKAZAWA

**Hybrid ▼ Foot Traffic, Monitoring, and Simulation**

11:15~12:30 Room2 (301+302) & Zoom-2

Chair: Atsushi TAKIZAWA (Osaka Metropolitan Univ.)

- 22 H13 Influence of Store Card Information on City Pedestrian Circulation  
○Yoshiro KINOSHITA (Nippon Institute of Technology)
- 23 H32 A Study on Tourism Activities in Nagoya CBD By Use of Point-Based Location Data  
○Yushiro KOZATO (Nagoya Institute of Technology), Yoshimasa MATSUMOTO, and Toshiyuki KANEDA
- 24 H88 Study on the Spatial Evaluation Index of Castle Town and its Adaptation: On the expansion and transition of the street network  
○Kaisei MIYASHITA (Univ. of Tsukuba), Shun WATANABE
- 25 H87 Trial of Network-type Process Simulation Using Actual Steel Frame Manufacturing Project Data  
○Satoru FURUKAWA (M.C.S. STEEL PLC.), Tomohiro YOSHIDA, Chi NAIYUAN, Tsuneo KAKUTA, and Shuzo FURUSAKA
- 26 H78 Meteorological and Vibration Monitoring at Building No.3 in Battle-ship Island  
○Narito KURATA (Tsukuba Univ. of Technology), Kenji SASAKI

**Hybrid ▼ Organized Session I: Design Science in Computational Intelligence and Architecture**

14:15~17:00 Room2 (301+302) & Zoom-2

Chair: Yuki KOBAYASHI (Osaka Metropolitan Univ.)

- 27 R107 Regional Resources Cognition Expressed in Scenic Postmark Groups  
○Takuto KOROGI (Kyoto Univ.), Kei YASUDA, and Ken MIURA
- 28 H99 Furniture Arrangement Using Isovist\_App  
○Kei YASUDA (Kyoto Univ.), and Ken MIURA
- 29 H34 Notation of Visual Experience while Walking in Subway Stations Using Isovist  
○Yuka OTAKE (The Univ. of Tokyo), Kentaro HONMA, Nozomu SUDO, Yuko ARAI, and Kotaro IMAI
- 30 H31 Minimum weight design by surrogate model of steel structural frames: examination with stress and interlaminar deformation angle constraints  
○Yamato ISHIMOTO (Kagoshima Univ.), Yohei YOKOSUKA
- 31 H18 Proposal for Apartment Design using Generative Design  
○Ryosuke UENO (Univ. of Tsukuba), Shun WATANABE
- 32 H2 Topology Optimization of Plane Trusses combining Structural Analysis by Classical Computing and Cross-section Change by Quantum Annealing

## ● Full and Short Papers / Interactive Presentation

- Kazuki HAYASHI (Kyoto Univ.), Makoto OHSAKI
- 33** H14 Topology Optimization of 3D Continuum Structures Based on Updating Design Variables using Machine Learning  
○Rio TSUCHIDA (Kyoto Univ.), Makoto OHSAKI
- 34** R84 Modeling Real-time Narrative Making in Design Activity — Learning from natural intelligence for enhancing future computational design systems—  
○Yuval KAHLON (Tokyo Institute of Technology), Haruyuki FUJII
- 35** R51 Extracting the Characteristics of a Cultural Landscape in Okinawa by Using a Generative Adversarial Network  
○Taku KITAGAWA (Tokyo Institute of Technology), Haruyuki FUJII, and Yuval KAHLON
- 36** H36 New Addition Methods of Diagonal Braces to Make Cubic Grids Rigid Based on Combinatorial Rigidity Theory  
○Taiga YOSHIYAMA (Osaka Metropolitan Univ.), Yuki KOBAYASHI
- 37** H55 Similarity of Character Expressions in Cities and Architecture Using Natural Language Processing  
○Nao TANIKAWA (Ritsumeikan Univ.), Satoshi YAMADA

### Hybrid ▼ Structure Optimization

10:00~12:00 Room3 (308) & Zoom-3

Chair: Yoshihiro KANNO (The Univ. of Tokyo)

- 38** H38 Automatic Generation of Deployment Mechanisms for Rigid Kirigami Using Mathematical Programming and Meta-heuristics  
○Taiki YUSA (The Univ. of Kitakyushu), Shinnosuke FUJITA
- 39** H39 Dynamic Response Prediction of Structures Using Machine Learning and Optimization of Standard Member Arrangement Considering Economics  
○Hiroshi NITTA (The Univ. of Kitakyushu), Shinnosuke FUJITA
- 40** H40 Stress Prediction Within the Linear Elastic Range of 3D Frame Structures Using Machine Learning  
○Yuma YABUUCHI (The Univ. of Kitakyushu), Shinnosuke FUJITA
- 41** H80 Global Topology Optimization of Frame Structures Considering the Density of Members  
○Naoto OKUZONO (The Univ. of Kitakyushu), Shinnosuke FUJITA
- 42** H95 Cross-sectional Optimization of Latticed Shells with Stress Constraints Based on Design Standard for Steel Structures Solved as Continuous Variable Problems  
○Naohiro TAMURA (The Univ. of Kitakyushu), Shinnosuke FUJITA
- 43** H59 Multi-objective Design Exploration in Construction  
○Osamu IMAZEKI (Kajima Corporation), Masatoshi ISHIDA, and Daiki KIDO
- 44** H89 Mechanical Properties of Auxetic Structures Inspired by the Geometrical Configuration of Penta-graphene  
○Yusuke SAKAI (Sony Computer Science Laboratories, Inc.)
- 45** R106 Study for Automatic Calculation of Static Seismic Load of Single Layer Reticulated Dome  
○Daigo MATSUBARA (Toyoashi Univ. of Technology), Yuji TAKIUCHI, Shoji NAKAZAWA, and Shiro KATO

### Hybrid ▼ City Planning and Space Syntax

14:15~15:30 Room3 (308) & Zoom-3

Chair: Kiminori NAKAZAWA (Nihon Univ.)

- 46** H97 Research on Quantitative Evaluation of the Outcomes of Art Events in Local Cities  
○Hirotsuka YAMADA (The Univ. of Shiga Prefecture), Takuo NAGAI
- 47** H117 A Simulation of Rescue Activity in Disaster Considering Whether or Not Information of Damage using Multi Agent Simulation  
○Koki ASANO (Kobe Univ.), Yuichiro YAMABE
- 48** R50 Study on Layout Optimization of Anchor Store and Break Place in Commercial Facility Using Multi Agent System and GA  
○Daisuke TAKADA (Kobe Univ.), Yuichiro YAMABE, and Akinori TANI
- 49** H30 The Planar Covering Problem by the Minimum 2D Isosvist Graph  
○Hideyoshi ODAWARA (Osaka Metropolitan Univ.), Atsushi TAKIZAWA
- 50** R54 Research on Shoplifting Prevention by Analyzing Spatial Configuration and Visible Area: Survey at retail stores in Wakayama City  
○Norihiko KAWASUMI (Wakayama Univ.), Takuto SEKIYA, and Shogo UEMICHI

### Hybrid ▼ XR

15:45~17:15 Room3 (308) & Zoom-3

Chair: Eriko KITAMOTO (Ritsumeikan Univ.)

- 51** H37 Analysis of Discussion Characteristics in Classes Using Immersive VR Communication  
○Ryoma KOBAYASHI (Kanazawa Institute of Technology), Yuichi SHIMOKAWA
- 52** H57 Cyber Physical System Using MR Space: Proposal of spatial connection representation  
○Haruki HIGASHIDA (Ritsumeikan Univ.), Satoshi YAMADA
- 53** R62 A Real-Space Experiment on Problems of Getting Lost and Wayfinding Behaviors in Subway Stations  
○Shuqi HAO (Nagoya Institute of Technology), Toshiyuki KANEDA
- 54** H65 Development of MR Communication Systems  
○Yusaku KOSE (Tokyo Denki Univ.), Kazuto HAYASHIDA, and Tatsuya SHIBATA
- 55** R113 Expanding Space by Creating “Awai” through the Use of Online Communication Systems  
○Kohei ISHIDA (The Univ. of Tokyo), Tomonari YASHIRO
- 56** H79 Evaluation of the Effectiveness of Immersive VR Communication in Architectural Design: Through housing design experiments  
○Yuya IKE (Kanazawa Institute of Technology)

## ■ DAY2: Friday, 2 Dec 2022 ■

### Hybrid ▼ Organized Session II: Virtual and Mixed Reality for Architectural and Urban Discipline 2022

10:30~11:30 Room1 (HALL) & Zoom-1

Chair: Tomohiro FUKUDA (Osaka Univ.)

- 57** H63 Applications and Prospects of Virtual and Mixed Reality in Architecture and Urbanism 2022 (1)  
○Tomohiro FUKUDA (Osaka Univ.), Yukio ANDO, Jun UEDA, Tomohisa OISHI, Yasunobu ONISHI, Eriko KITAMOTO, Narito KURATA, Suisho SAKATANI, Gaku SASADA, Hideki NADA, Naomi MATSUNAGA, Hiroto MATSUYAMA, and Eisuke MITSUDA
- 58** H64 Applications and Prospects of Virtual and Mixed Reality in Architecture and Urbanism 2022 (2)  
○Tomohiro FUKUDA (Osaka Univ.), Yukio ANDO, Jun UEDA, Tomohisa OISHI, Yasunobu ONISHI, Eriko KITAMOTO, Narito KURATA, Suisho SAKATANI, Gaku SASADA, Hideki NADA, Naomi MATSUNAGA, Hiroto MATSUYAMA, and Eisuke MITSUDA
- 59** H68 Study on the Possibility to Substitute BIM Model for Design for VR Model for Presentation  
○Miho SUENAGA (Kumamoto Univ.), Yasunobu ONISHI
- 60** H121 Confirmation of weldability of steel bridges Using Virtual Reality: Application of VR technology to the bridge field  
○Koki TERUYA (IHI Infrastructure System Co.,Ltd.), Kento SHINTANI, Toru YOKOYAMA, and Naoto HARA

### Hybrid ▼ 3D Modeling

13:00~14:00 Room1 (HALL) & Zoom-1

Chair: Norihiko KAWASUMI (Wakayama Univ.)

- 61** H7 Study on the Automatic Site Modeling Method Using a Drone for Emergency Temporary Housing Complex  
○Ryusei MAEDA (Kumamoto Univ.), Yasunobu ONISHI
- 62** H21 A Study on Preservation and Restoration of Historic Landscape Using BIM and CIM  
○Tetsuro SUZUKI (Nihon Univ.), Kiminori NAKAZAWA
- 63** R3 A Study on River Flood-control in Castle Town for the Sengoku Period: The flood control effects of the Kamikido constructed with soil as a castle wall  
○Yoshitami NONOMURA (National Institute of Technology, Fukui College), Shito TERAMAE, and Haruchika HAGIWARA
- 64** R46 Consideration on Research Methods for Creating 3D Models of Historic Architectures: About an investigation of the internal space using “3D-scanner” and “photographic surveying”  
○Yoshizumi TSUNEMATSU (TOHOKU GAKUIN Univ.), Kazuya SAKURAI

### Hybrid ▼ Organized Session III: Geospatial Society and Regional Environment

10:30~12:15 Room2 (301+302) & Zoom-2

Chair: Yuji KOBAYASHI (Oita Univ.)

- 65** H20 A Study on Location of Restaurants in Commercial District Using GIS  
○Risa HOSHI (Nihon Univ.), Kiminori NAKAZAWA

## ● Full and Short Papers / Interactive Presentation

- 66 H81 A Trial of Urban Area Change Detection by Constant Analysis of Satellite SAR  
○Tomohiko SAKATA (Building Research Institute)
- 67 H91 Optimization of the Start Time of Secondary Evacuation from the Assumed Tsunami Flooding Area of Osaka City in the Case of the Nankai Trough Mega Earthquake  
○Yoko TANAKA (Osaka Metropolitan Univ.), Atsushi TAKIZAWA
- 68 R45 Evaluation for the Population Coverage Ratio and Services Needs of the Medical and Welfare Facilities Considering the Walking Distance of Elderly  
○Yuka KIHARA (Oita Univ.), Yuji KOBAYASHI
- 69 R41 Estimation of the Population exposed to Disasters caused by Nankai Trough Earthquake and Evaluation of High-Risk Areas Refuge: Case study on Saiki City, Oita Prefecture  
○Tokito Tsubota (Oita Univ.), Yuji KOBAYASHI
- 70 H42 Relationship Between Changes in Land Use and Disaster Risk: Case study on Saiki City, Oita Prefecture  
○Kotaro INOUE (Oita Univ.), Yuji KOBAYASHI
- 71 H92 A Methodology for Describing Spatial Characteristics of Housing Complex Based on Visibility of Common and Private Spaces  
○Takeshi FUJII (Kanazawa Institute of Technology), Shota SUZUKI

### Hybrid ▼ Green Building

#### 13:00~14:00 Room2 (301+302) & Zoom-2

Chair: Yukiko YOSHIDA (Ibaraki Univ.)

- 72 H33 A Study on Sound Reduction by Partitions: Comparison between CFD-based acoustic analysis and actual measurement  
○Hidetoshi UCHIDA (Tokyo Denki Univ.), Masatoyo OGASAWARA, and Takeshi AKITA
- 73 H73 Study on the Effect of Counting People and Air Conditioning Usage on Energy Consumption in A University Campus  
○Nanami SUGIMURA (Ibaraki Univ.), Yukiko YOSHIDA
- 74 H77 The Impact of the Compact City Policy in Terms of the Introduction of Distributed Energy Systems  
○Amara TAKASUGA (Univ. of Tsukuba), Shun WATANABE
- 75 R27 Visualizing the Effect of Human-sensor for Lighting Energy Saving: Application of Unity and Oculus for developing the visualization tool in design stage  
○Zhenjiang SHEN (Kanazawa Univ.), Kenichi SUGIHARA, Yoshiaki INAGAKI, and Xiao TENG

### Hybrid ▼ BIM

#### 10:30~12:00 Room3 (308) & Zoom-3

Chair: Michio MATSUBAYASHI (Building Research Institute)

- 76 H5 Development and Practice of Final Inspection Based on openBIM: Aiming to realize confirmation application by BIM  
○Akio ARAKAWA (Takenaka Corporation), Kozo NOSE, and Hajime NOGUCHI
- 77 H23 A Study on Application of BIM for Conservation and Creation of Industrial Modernization Heritage  
○Hiroto MASE (Nihon Univ.), Miyuki WATANABE, and Kiminori NAKAZAWA
- 78 H105 Research on the Attachment of Location Information to Architectural Spaces and Linkage with Facility Management Databases: Proposal of a new method to utilize general-purpose SaaS for facility management  
○Kyouhei HAKATA (Azusa Institute of Research), Ryuichi ISHIKAWA, Hiroshi MURAI, and Tomoya YASHIRO
- 79 H118 Development of the Inspection Support System for Outdoor Space of Public Housing Using BIM and Cloud Computing  
○Eisuke OGATA (Kumamoto Univ.), Yasunobu ONISHI
- 80 H122 Improvement of the Erection Planning Support System for Steel Frame Using BIM  
○Junya NAGANO (Kumamoto Univ.), Yasunobu ONISHI
- 81 R83 A Study on Developing Guideline for Maintenance Management, Design and Construction for Public Rental Housing: Developing BIM for maintenance management and application for accumulating information of maintenance using tablet device with local governments  
○Koji KATAYAMA (Building Research Institute), Hidekazu FUJIMOTO

### Hybrid ▼ GIS

#### 12:45~14:30 Room3 (308) & Zoom-3

Chair: Tomohiko SAKATA (Building Research Institute)

- 82 H6 Development of Educational Program That Handles Positional

Information in Cross-cutting Course Related to IoT

○Michio MATSUBAYASHI (Building Research Institute)

- 83 H15 A Study on Runoff Analysis Using the Construction Year of Check Dam and Probability Precipitation: Prediction of river flow during a rainstorm in Doudougawa of Fukuyama City, Hiroshima Prefecture  
○Hisayoshi NONOGAKI (National Institute of Technology, Fukui college), Yoshitami NONOMURA, and Haruchika HAGIWARA
- 84 H19 Revitalization of Gated Communities in the Old Towns in China: The case of Zhengzhou city, Henan province  
○Jiachen SUN (Univ. of Tsukuba), Shun WATANABE
- 85 H24 A Study on Extraction Conversion Use Areas using GIS  
○Yuta KYUTAKI (Nihon Univ.), Kiminori NAKAZAWA
- 86 H56 A Study on Interactive Education of History and City Planning Using Web-GIS  
○Yuki KOBAYASHI (Nihon Univ.), Shunsuke MIYAHARA, Tomohiro AMPO, and Kiminori NAKAZAWA
- 87 H28 A Study on Probability Precipitation Using Plural Precipitation Statistic Data: Comparison of the hourly amount of rainfall of return period 100 years by the local difference of river flow during a rainstorm in Doudougawa of Fukuyama City, Hiroshima Prefecture  
○Hisayoshi NONOGAKI (National Institute of Technology, Fukui college), Yoshitami NONOMURA, and Haruchika HAGIWARA
- 88 R98 A Study on Disaster Record and Life Rebuilding Using GIS: A case study of July 2020 flood disaster in Hitoyoshi KUMAMOTO  
○Sotaro Tsuboi (Disaster Reduction and Human Renovation Institute)

R: Full Paper / H: Short Paper / I: Interactive Presentation

**AIJISA 2022: The 45th Symposium on Computer Technology of Information, Systems and Applications  
Program and Venue**

Venue Date	Room 1 (HALL)	Room 2 (301+302)	Room 3 (308)
Dec <b>1</b> Thu	<p>9:30-9:45 ▼Opening Address Shun WATANABE (University of Tsukuba)</p> <p>A 10:00-11:00 ▼Algorithmic Design</p> <p>M 11:15-12:15 ▼Digital Fabrication</p>	<p>10:00-11:00 ▼AI</p> <p>11:15-12:15 ▼Foot Traffic, Monitoring, and Simulation</p>	<p>10:00-12:00 ▼Structure Optimization</p>
	<p>13:00-14:00 ▼Interactive Sponsor Session</p> <p>14:00 Group Photo Session</p> <p>P</p>		
	<p>M 14:15-17:15 ▼[Research Workshop] Education for Digital Transformation in Architecture, Continued</p>	<p>14:15-17:00 ▼[OS-I] Design Science in Computational Intelligence and Architecture</p>	<p>14:15-15:30 ▼City Planning and Space Syntax</p>
			<p>15:45-17:15 ▼XR</p>
Dec <b>2</b> Fri	<p>A 9:15-10:15 ▼[Keynote-I] Considering the Era of Architectural DX Keynote speech: Shigeru BAN Introduction: Naomi MATSUNAGA</p> <p>M 10:30-11:30 ▼[OS-II] Virtual and Mixed Reality for Architectural and Urban Discipline 2022</p>	<p>10:30-12:15 ▼[OS-III] Geospatial Society and Regional Environment</p>	<p>10:30-12:00 ▼BIM</p>
	<p>13:00-14:00 ▼3D Modeling</p>	<p>13:00-14:00 ▼Green Building</p>	<p>13:00-14:00 ▼GIS</p>
	<p>14:50 Group Photo Session</p> <p>15:00-17:30 ▼[Keynote-II] Building Information Technology and the SDGs Architecture x SDG: A User's Perspective on Transformation Norichika KANIE Contribution of Building Information Technology to the SDGs: Thinking from the perspective of changing building production Tsuyoshi SEIKE Introduction: Narito KURATA Moderator: Shun WATANABE</p> <p>P M 17:30-17:50 [Hybrid] Award Ceremony Closing Address</p>		