

The 44th Symposium on Computer Technology of Information, Systems and Applications (AIJISA 2021)

<https://aijisa.org/2021/>

Architectural Institute of Japan
Research Committee on Information Systems Technology

■ Humanity DX ■

This year's theme is "Humanity DX". On the one hand, Digital Transformation (DX) is being promoted in each country and has penetrated digital technology in ways that are transforming people's lives for the better and bringing about innovation. On the other hand, DX has a strong technological image. We would like to add "humanity" to "DX" to suggest a new world and society. "Humanity" is corrective cultural richness. It suggests a society that attaches great importance to and also focuses on the connection between people, nature, planning and community development.

Date: December 9 (Thu) and 10 (Fri), 2021

Venue: Ritsumeikan University Suzaku Campus / Online

Registration fees:

1) with digital proceedings

AIJ member: JPY 8000

Non-member: JPY 10000

Student (AIJ member): JPY 5000

Student (Non-member): JPY 5500

2) without digital proceedings

Student: JPY 1000

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".

Registration: Official Web Site (Advance application required)

Capacity: 80 persons at Ritsumeikan University Suzaku Campus (55 for presenters and 25 for general audiences), no capacity at online venue.

Application deadline for presenters: November 29 (Mon)

at Ritsumeikan: <https://www.aij.or.jp/event/detail.html?productId=653512>

Online: <https://www.aij.or.jp/event/detail.html?productId=653513>

Application deadline for non-presenters: from November 30 (Tue), to December 6 (Mon)

at Ritsumeikan: <https://www.aij.or.jp/event/detail.html?productId=653514>

Online: <https://www.aij.or.jp/event/detail.html?productId=653515>

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Program Overview

1. Opening Address

WATANABE Shun (Univ. of Tsukuba)

Date: December 9 (Thu) 9:15-9:30

2. Full & Short Papers /Interactive Presentation

Research Workshop

Education for Digital Transformation in Architecture

Organized Session I

Design Science in Computational Intelligence and Architecture

Organized Session II

Virtual and Mixed Reality for Architectural and Urban Discipline 2021

General Session

Architecture System and Management, XR and Algorithmic Design, 3D Modeling and Digital Fabrication, Building Information Modeling and Computer Aided Design, Geographic Information System, XR and Visualization, City and Regional Planning, Architectural Planning and Green Building, Artificial Intelligence and Machine Learning and Optimization, etc.

3. Keynote

Humanitarian Digital Transformation for architects and architectural education

(Simultaneous translation: EN-JP)

Date: December 9 (Thu) 9:30-12:00

Projects and their Consequences

Jesse Reiser and Nanako Umemoto (RUR Architecture DPC, Princeton University School of Architecture)

What if....."Reflections on architectural education for an unpredictable future

Hitoshi Abe (UCLA)

Dialogue Coordinator: Kaon Ko (Tokyo University of Science) and Naomi Matsunaga (Lemon Gasui)

DX in Architecture and Urbanism

Date: December 10 (Fri) 15:00-17:30

The future realized by 3D city models "PLATEAU"

Yuya Uchiyama (Ministry of Land, Infrastructure, Transport and Tourism)

The Forefront of Smart City, Its Value and Use Cases

Kazuhiisa Kumano (Dassault Systems)

DX in Buildings and Cities realized by Digital Twin

Ryota Ieiri (Construction IT World)

Dialogue Coordinator: KURATA Narito (Tsukuba University of Technology)

4. Award Ceremony & Closing Address

Date: December 10 (Fri) 17:30-17:50

5. Networking

Date: December 9, after the presentation session to 19:00

FEE: The social gathering is open to everyone, with or without payment of the AIJISA registration fee.

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

Twitter ▶ <https://twitter.com/aijisa2016> Hashtag ▶ #AIJISA

Facebook ▶ <https://www.facebook.com/aijrcist/>

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Inc. and Unity Technologies Japan, G.K.

■ DAY1: Thursday, 9 Dec 2021 ■

13:00~16:00 #1 Room1 (HALL) & Zoom-1

Hybrid ▼ Research Workshop: Education for Digital Transformation in Architecture

Chair: Keita KADO (Chiba University) and Yasunobu ONISHI (Kumamoto University)

- 1 H80 Operation of BIM for Digitalization: Architectural information technology in the after-corona GX era
○Takashi TSUNAKAWA
- 2 H20 Steps Toward Construction DX and The Appearance of Digital Human Resources
○Takaaki MIYAUCHI
- 3 H45 Architectural DX and Education
○Koji MURAMATSU
- 4 H71 Questionnaire Survey on Architectural Information Education for Architectural Education Institutions
○Yuichi SHIMOKAWA, Yasunobu ONISHI, Keita KADO, Takeshi KIMURA, Narito KURATA, Hideyuki SAWADA, Sou SUGITA, Tsukasa TAKENAKA, Kiminori NAKAZAWA, Senhiko NAKATA, Toshifumi MAE, Michio MATSUBAYASHI, Yuji MATSUMOTO, and Yasuhiko MORIYA

16:15~17:45 #1 Room1 (HALL) & Zoom-1

Hybrid ▼ Architecture System and Management

Chair: Zhenjiang SHEN (Kanazawa University)

- 5 R06 Development of an Erection Planning Support System for Steel Frame Using BIM
○Shintaro EMUR and Yasunobu ONISHI
- 6 H25 Comparison between Experts and Beginners in Carpentry: Succession of traditional techniques with Human Computer Interaction
○Naoyuki KOJIMA, Shoutarou TAKASAKI and Satoshi YAMADA
- 7 H62 A Study of Improve Efficiency using Tablet Devices and BIM for Daily Inspection of Public Housing
○Koji KATAYAMA, Hidekazu FUJIMOTO, Masaki MUTO and Satoru TAKAHASHI
- 8 H113 Possibility of Using Virtual Sensor: Study on evaluation of environmental simulation
○Yukiko YOSHIDA
- 9 H116 Research on Indoor Thermal Environmental Control System using Predicted Mean Vote as an Index: Examination of the effects of multipoint measurement and circulators
○Reiji SAWAI, Yuichiro YAMABE and Akinori TANI
- 10 R105 Social Simulation of Building a Circular Resource Society by Reusing Construction Materials Using MAS: Consideration of stock stabilization of construction materials
○Yuko TOKUKATSU, Yuichiro YAMABE and Akinori TANI

13:00~15:30 #2 Room 2 (Multipurpose room 1) Zoom-2

Hybrid ▼ OS I: Design Science in Computational Intelligence and Architecture

Chair: Akihiro MIZUTANI (Toyoashi University of Technology)

- 11 H109 New Upper and Lower Bounds for the Total Number of Edge Crossings of Euclidean Minimum Weight Laman Graphs
○Yuki KOBAYASHI, Yuya HIGASHIKAWA, Naoki KATOH, and Taiga YOSHIYAMA
- 12 H07 Surface Generation from Data Points Satisfying Indeterminate System of Linear Equations
○Yoshihiro KANNO
- 13 H103 Exhibition Planning Based on Visibility Analysis
○Kei YASUDA and Ken Miura
- 14 H43 A Notation of Pedestrian Visual Experience Process in Architecture Using VR Eye Tracker
○Kento MATSUI, Kentaro HONMA and Kotaro IMAI
- 15 H11 Optimization of Floor Layout in Consideration of Structural Performance: Steel structural framework model with four-room floor plan
○Moe IMAMURA and Yohei YOKOSUKA
- 16 R47 Modeling Cognitive Processes in Design from the Designer's Perspective: Towards a computational model for implementing intentional capacities in digital systems

○Yuval KAHLON and Haruyuki FUJII

- 17 H12 Topology Optimization of Planar Trusses by Reinforcement Learning Agents Trained for the Sequential Member Addition and Removal Process
○Kazuki HAYASHI and Makoto OHSAKI
- 18 H19 Reinforcement Learning for Construction Process of Truss by Stability Assessment and Graph Embedding
○Masaya KOTERA, Kazuki HAYASHI and Makoto OHSAKI
- 19 H09 Generating Topology-Optimized Shapes with GAN: Proposal for an idea support system using machine learning
○Tomohiro MIYAKE and Yohei YOKOSUKA
- 20 H13 Structural Optimization Using Surrogate Models with Neural Networks: Bending strain energy minimization for 2D bridge models
○Taishi KUJURO, Yohei YOKOSUKA and Toshio HONMA

15:45~17:00 #2 Room 2 (Multipurpose room 1) Zoom-2

Hybrid ▼ XR and Algorithmic Design

Chair: Yoshihiro KANNO (The University of Tokyo)

- 21 H99 A Study on Tabletop Design Evaluation System Using AR
○Takuto SEKIYA, Norihiro KAWASUMI and Junya WADAMA
- 22 H119 Consideration on Spatial Experience and Evaluation by On-Site AR
○Junya WADAMA, Norihiro KAWASUMI and Takuto SEKIYA
- 23 H05 Development of Automatic Layout System of Sanitary Equipment for Office Restroom Planning
○Ryusei MAEDA and Yasunobu ONISHI
- 24 R64 Automatic Generation of 3D Building Models with L-shaped Roof by L-shaped Polygon Partitioning and Rectification
○Kenichi SUGIHARA, Zhenjiang SHEN and Takahiro MURASE
- 25 R70 "Becoming" Digital Ornament: An alien in distancing effect
○Atsuhiko TANOKUCHI and Kaon KO

12:45~13:45 #3 Room 3 (Multipurpose room 2) Zoom-3

Hybrid ▼ 3D Modeling and Digital Fabrication

Chair: Norihiro KAWASUMI (Wakayama University)

- 26 R36 Verification of Automatic Modeling of Smooth Surfaces using Pattern Projection in Photogrammetry
○Masaaki TSUJI, Hibiki NAKAJIMA, Kenichi IJIMA and Masao KITAZAWA
- 27 H89 3D Visualization Effect of the Site and Prospects on the Field of Maintenance Work of a Production Facility
○Miho CHIWAKI, Naoki MITSUI and Yuki MATSUYAMA
- 28 H69 Fabrication for Raw Wood using Position and Posture Estimation
○Genki FURUSHO, Yusuke NAKAMURA, Shingo TSUNEKUNI and Gakuhiro HIRASAWA
- 29 H121 A Study on Operation Methods by the Fabrication Truck for PBL
○Kiminori NAKAZAWA, Tetsuhito KINOSHITA, Raimu YATA and Yuki YOKOYAMA

14:00~15:30 #3 Room 3 (Multipurpose room 2) Zoom-3

Hybrid ▼ Building Information Modeling and Computer Aided Design

Chair: Kenichi IJIMA (Osaka Electro-Communication University)

- 30 R02 Proposal of Evaluation Method for Arrangement of Emergency Temporary Housing Units Based on Ease of Communication Using BIM
○Aono TAMAKI and Yasunobu ONISHI
- 31 H03 Development of a Program to Support an Arrangement of Emergency Temporary Housing Using BIM
○Masanori TAGUCHI and Yasunobu ONISHI
- 32 H04 Development of an Inspection Support System for Public Housing Using BIM and Cloud Computing
○Takumi KAWABATA and Yasunobu ONISHI
- 33 H10 Representation of Components' Locations Related to Water Leakage Using Geometric Operation to Them in Building Information Models
○Michio MATSUBAYASHI
- 34 R55 Development/Practice and Consideration of Confirmation Application based on OpenBIM: Aiming to realize confirmation application by BIM
○Kozo NOSE, Hajime NOGUCHI and Akio ARAKAWA
- 35 H61 A Study on Dynamically Preserved Historical Architecture using BIM: The application of BIM for specificities of historical architecture
○Miyuki WATANABE, Hiroto MASE, Sayaka HUKAMI and

● Full and Short Papers / Interactive Presentation

Kiminori NAKAZAWA

○Yoshiro KINOSHITA and Sho TAKABUCHI

15:45~17:00 #3 Room 3 (Multipurpose room 2) Zoom-3

Hybrid ▼ Geographic Information System

Chair: Ai SAKAKI (Setsunan University)

- 36 H46 An Investigation of Direction Sense and Spatial Cognition in Developmental Disability
○Jialu SU and Shun WATANABE
- 37 H23 Leveraging 3D City Models to Update GIS Education
○Shun WATANABE
- 38 H52 A Study on Landscape Planning Based on 3D Assessment using GIS and BIM: Examination of assessment method by optimization
○Miharu YUDASAKA and Kiminori NAKAZAWA
- 39 H53 A Study on Conversion in Housing and Commercial Mixed Land Use Areas using GIS
○Yuta KYUTAKI and Kiminori NAKAZAWA
- 40 H54 A Study on Sustainable Allocation Pattern of Stores using GIS
○Risa HOSHI and Kiminori NAKAZAWA

17:15~18:15 #3 Zoom-3

Full Online ▼ XR and Visualization

Chair: Michihito SHIRAIISHI (Shimizu Corporation)

- 41 H15 A Study on the Sense of Safety Brought to Pedestrians by Bollard Arrays
○Takahisa NAKAMURA and Yohsuke YOSHIOKA
- 42 H87 Research on The Utilization Method of XR Devices for Application to Structural Form Design: Shape manipulation navigation using sensitivity information
○Naohiro KADOZUMI and Eisuke MITSUDA
- 43 H84 A VR experiment on Guide Sign Recognition and Wayfinding Behavior in Subway Station
○Shuqi HAO and Toshiyuki KANEDA
- 44 R66 Automatic Generation of 3D Dynamic Building Models for Physical Simulation including Tsunami
○Takahiro MURASE, Kenichi SUGIHARA and Zhenjiang SHEN

12:30~13:45 #4 Zoom-4

Full Online ▼ City and Regional Planning

Chair: Tomohiko SAKATA (Building Research Institute)

- 45 R26 Proposals for Residential Areas and City Planning Systems Assuming River Flooding in River Basins: Case study on Oita city, Oita prefecture
○Taisei HATTORI, Yuji KOBAYASHI and Yoshihisa TSURUNARI
- 46 R27 Estimation of Volcanic Disaster Damage and Proposal of Disaster Prevention Guidelines: Case study on Beppu city, Oita prefecture
○Yuki IWANO, Yuji KOBAYASHI and Yoshihisa TSURUNARI
- 47 R29 Verification of the Effects of Establishing Base Areas and Population Consolidation for Sustainable Regional Structures in Oita Prefecture
○Shohei YOSHIDA, Yuji KOBAYASHI and Yoshihisa TSURUNARI
- 48 R41 Evaluation and Prediction of Regional Structure and Proposal of Residential Area Assuming a Disaster: A case study of Hita city, Oita prefecture
○Moeri SHIROMIZU, Yuji KOBAYASHI and Yoshihisa TSURUNARI
- 49 H122 Study on Layout Optimization of Anchor Store and Break Place in Commercial Facility Using Multi Agent System and GA
○Daisuke TAKADA, Yuichiro YAMABE and Akinori TANI

14:00~15:30 #4 Zoom-4

Full Online ▼ Architectural Planning and Green Building

Chair: Hiroyuki SOGABE (Aichi Institute of Technology)

- 50 H58 Research about Finding a Fall and Prediction by Attitude Estimation and Anomaly Detection: Extracting feature value and classification with OpenPose
○Takumi SHIBATA and Satoshi YAMADA
- 51 H98 Prototyping of Data Aggregation System from Varieties of CO2 Sensors through IoT-Hub that Enables Interoperable Data Exchange
○Tomonari YASHIRO, Jun MATSUMURA, Shinji YOKOGAWA and Yo ISHIGAKI
- 52 H111 A Study on Green Building Indicators for Digital Design: In the light of ISO 21929-1
○Momoko NAKAOKA and Tomonari YASHIRO
- 53 H32 Effectiveness Analysis of Outdoor Pedestrian Walkway Operation Methods Considering Emergencies in Congested Conditions

- 54 R110 Impressions of Personal Booths in the Office and Development of a Customized Design System for Tabletop Partitions

○Tomoya WAKASUGI, Yuji MATSUMOTO, Toshifumi MAE

- 55 H115 Evaluation of Station-to-Station Compatibility of Platform Elevator Layout Based on Passenger Movement

○Yuko ARAI, Liling LIU, Takahiko KUSAKABE, Yukari NIWA and Kentaro HONMA

15:45~17:00 #4 Zoom-4

Full Online ▼ Artificial Intelligence and Machine Learning

Chair: Tomonari YASHIRO (The University of Tokyo)

- 56 H88 Application of the Belief-Desire-Intention Framework to Formal Representation of Designing: Towards a computational model of thought process in designing
○Haruyuki FUJII, Yuval KAHNOLN and Kenichi SHINOZAKI
- 57 R118 Study on Macro&Micro Behavioral Measurement System by Using OpenPose: Pedestrian counting and walking locus as macro behavior attribute
○Taiga TANAKA, Taiki YOSHII, Kazuto HAYASHIDA, and Tatsuya SHIBATA
- 58 H120 An Architectural Structure Based on Leaf Vein by Image Processing of Leaf
○Toshifumi MAE, Tatsuya KIDA, Ryuichi KOBAYASHI, and Yuji MATSUMOTO
- 59 H17 Seismic Damage Assessment of Wooden Houses Using CNN with Response Acceleration Records
○Toramori OKADA and Yuji MIYAZU
- 60 H60 Shape Optimization of Shells Considering Geometric Nonlinearities
○Yoshiya MORITOMO and Shinnosuke FUJITA

17:15~18:15 #4 Zoom-4

Full Online ▼ 3D Modeling, Building Information Modeling and Computer Aided Design

Chair: Takeshi KIMURA (A&A)

- 61 H57 Study on Reproduction Method of the 3D model of the Building Using the Photogrammetry Part I
○Hisayoshi NONOGAKI, Yoshitami NONOMURA and Haruo HAGIWARA
- 62 H94 Examination of Maintenance Cost Calculation System Using BIM at the Design Stage
○Naoto HASEGAWA, So SUGITA and Hiroshi SUGITA
- 63 R102 Consideration on Utilization of BIM Information Data by WBS using Construction Information Standard Classification Systems: Targeted uniFormat and master format of omniclass, elements/function, systems and products of uniclass 2015
○KIEU Tri Cuong and Kazuya SHIDE
- 64 H37 A Comparison Between UI Design in Game Development and CAD Software
○Weam NUMAN, Yuval KAHNOLN and Haruyuki FUJII

■ DAY2: Friday, 10 Dec 2021 ■

9:15~10:45 #1 Room1 (HALL) & Zoom-1

Hybrid ▼ [OS II] Virtual and Mixed Reality for Architectural and Urban Discipline 2021

Chair: Eriko KITAMOTO (Ritsumeikan University)

- 65 H40 Applications and Prospects for Virtual and Mixed Reality in Architecture and Urban Areas (1)
○Tomohiro FUKUDA, 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
- 66 H42 Applications and Prospects for Virtual and Mixed Reality in Architecture and Urban Areas (2)
○Tomohiro FUKUDA, 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
- 67 R44 Study on a Sharing Method of an Architectural Design Proposal Using AR Goggles for Smartphone
○Yuno MURAKI and Yasunobu ONISHI

● Full and Short Papers / Interactive Presentation

68 H08 Improvement of the Support System for View and Input of Facility Operations and Maintenance Information Using MR Focusing on Behavioral Characteristics

○Mai FUJITA and

69 H91 An Autonomous Time Synchronized Sensing System for Video and Vibration Using a Chip Scale Atomic Clock (CSAC)

○Narito KURATA

70 H107 Guiding the Cognition of Design Information through MR-based Experience

○Kohei ISHIDA and Tomonari YASHIRO

11:00~12:00 (Setup: 10:45) #1 Room1 (HALL) & Zoom-1

Hybrid ▼ Interactive Presentation

Chair: Keita KADO (Chiba Univ.)

71 I124 A Proposal of a Method for Arranging the Stones of a KARESANSUI Garden based on the Distances between Stone Groups

○Kentaro UEDA and Yuki KOBAYASHI

72 I129 Interactive Traffic Simulation with LEGO Blocks and Projectors: Examination of the reorganization of bus stop positions on the University of Tsukuba Campus

○Shiori NISHIMURA, Keita KOYAMA, Yuichiro YAMAMURA, Tatsuki ISHII, Ren KAWANABE, Rikuto SHIGEMI, Chinami MATSUBARA, Junya ONOE, Mizuki NAKANO, Ryo HANAOKA, Ryunosuke FUKUZAKI, Takahiro NOGUCHI, Hiroyasu ANDO and Yoshiaki OHSAWA

73 I92 A Study on Design Focusing on Spatial Perception for Changes in Sound and Shape

○Eriko KITAMOTO and Satoshi YAMADA

74 I126 "A Zero Emission Tree" - A Symbol Tree for the Decarbonized Society: Application of digital technology through planning and manufacturing for sustainable renovations

○Yasuto TANI, Shunpei FUKAMACHI, Mitsuhiro KUROKI, Satoshi OE, Tamaho SHIGEMURA and Naoto TAMURA

9:00~10:30 #2 Room 2 (Multipurpose room 1) Zoom-2

Hybrid ▼ Optimization

Chair: Makoto OHSAKI (Kyoto University)

75 R68 Buckling Behavior and Buckling Load of a New Two-way Dome Constructed by Orthogonal Arches Included in Different Surfaces Stiffened by Diagonal Struts: Effect of curved surface distance and load conditions

○Naoya HIGUCHI and Shoji NAKAZAWA

76 H22 Combinatorial Optimization of Lattice Shells by Sequential Quadratic Programming

○Keita TAKESHTA and Shinnosuke FUJITA

77 H95 Shape, Thickness Distribution, and Topology Optimization of a Continuum Shell using the Gradient Method and Sequential Quadratic Programming

○Teppei WATANABE and Shinnosuke FUJITA

78 H101 Cross-section Optimization of Latticed Shells Consist of Steel Pipes and H-beams Solved as Continuous Variables

○Naohiro TAMURA and Shinnosuke FUJITA

13:00~14:30 #2 Room 2 (Multipurpose room 1) Zoom-2

Hybrid ▼ City and Regional Planning

Chair: Takeshi FUJII (Ritsumeikan University)

79 R16 A Study on River Floods in Ichijodani River for the Sengoku Period: 3D model creation and the river flooding analysis using the archaeological materials

○Yoshitami NONOMURA, Yuuri SHIMAWAKI and Haruchika HAGIWARA

80 H28 A Study on Organizing Conditions for Landscape Design Using Optimization Model

○Daisuke HOSOI, Kiminori NAKAZAWA, Shin KOBAYASHI and Yuki TORIGATA

81 H35 A Research on How to Obtain Opinions Using a Digital Museum

○Tatauya MIYAHARA, Kiminori NAKAZAWA, Shunsuke MIYAHARA and Tomohiro AMPO

82 H86 A Research on Morphology and Connectivity of Pedestrian Deck in Front of The Station: An investigative analysis and typification targeted all train stations in Kinki area

○Takeshi FUJII and Yousuke HARADA

83 H48 A Study of Correlation Between Changes of Traffic Network and Property Value

○Akihiro NASU, Kentaro HONMA and Kotaro IMAI

84 H108 Optimization of Road and Dwelling Space around a Railroad Station: Study of road layout method considering diagonal direction

○Yoshifumi KANAYAMA, Yuichiro YAMABE and Akinori TANI

9:30~10:45 #3 Room 3 (Multipurpose room 2) Zoom-3

Hybrid ▼ Artificial Intelligence and Machine Learning

Chair: Shuichi ASAYAMA (Tokyo Denki University)

85 H59 Visualization of Reference Relationships and Interpretation of Approximation of Architectural Design Using Three Types of Deep Learning

○Hiroki OCHI, Nao TANIKAWA and Satoshi YAMADA

86 H75 Research of Design Generation AI Using Deep Learning and Research about Expansion of Cognition

○Mai HARADA and Satoshi YAMADA

87 H97 A Study on Analysis of Visibility Features Using Deep Learning

○Kento FUKUMOTO, Yuhi MAEDA, Syuhei HORIE, and Keita KADO

88 H51 Member Section Optimization of Lattice Shells Considering Collapse Load Factor Obtained by Neural Network

○Taisei NISHIE and Shinnosuke FUJITA

89 H85 Fundamental Study on Shape Optimization of Reticulated Shell Using Gaussian Process Regression

○Daigo MATSUBARA, Yuji TAKIUCHI and Shoji NAKAZAWA

13:00~14:45 #3 Zoom-3

Full Online ▼ Digital Fabrication

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

90 H14 Production Report of a Kerf Bending Bench Applying the Notch Position Optimization Method

○Kairi SAITO, Teppei WATANABE, Hiroki KOBAYASHI, Taiki YUSA and Shinnosuke FUJITA

91 H74 Processable Packing of Multiple Parts into Single Irregular Object

○Shingo TSUNEKUNI, Genki FURUSHO and Gakuhiro HIRASAWA

92 H76 A Study on Path Generation of Robot 3d Printing: Generation of printable 3D curves and curves optimized for stress status of a modeled object

○Taichi TERADA and Gakuhiro HIRASAWA

93 H39 A Study on Automatic Generation of Detour Operation of 5-axis Machine by Deep Reinforcement Learning and Depth Camera

○Ryoji FUJIOKA, Genki FURUSHO, Keita KADO and Gakuhiro HIRASAWA

94 H128 Development of Mud Plastering Robot by using Motion Capture of Plasterer

○Ikumi NOBORIO, Makoto MURAMOTO, Tomomasa NISHIMURA, BANA Geregely Péter and Tomohiro INOUE

95 H81 A Design Method for Cover-Bundle Type Joint with Multiple Components on the Use of a 3D Printer

○Kazuho MIYAKE and Eisuke MITSUDA

96 H117 A Study on Simplifying Material Management and Data Creation in Fabrication Using Digital Fabrication

○Kota OKUGAWA, So SUGITA and Mizuki NAKAMURA

9:30~10:30 #4 Zoom-4

Full Online ▼ Geographic Information System

Chair: Yuji KOBAYASHI (Oita University)

97 R34 Study of Evacuation Procedure Using the Evacuate Mutual Support System in District On-foot Evacuation Drill

○Fukutsugu OGAWA and Toshikazu IKEMOTO

98 H77 Analyses on Stop Points and Area Selection of Nagoya CBD Visitors by applying Spatial-Temporal Position Data

○Yoshimasa MATSUMOTO and Toshiyuki KANEDA

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99 H132 Use of GIS and based on Industry-Academia-Agriculture Collaboration for Identifying the Location of group homes for People with Disabilities in Fukuoka City

○Harumi KAGAWA

100 H18 A Study on The Method for Estimating Walking Data by Use of Point Based GPS Data

○Naoya TAKAGI and Atsushi TAKIZAWA

13:00~14:45 #4 Zoom-4

Full Online ▼ Structure and Optimization

Chair: Yoshiro KINOSHITA (Nippon Institute of Technology)

- 101** R63 Production and Construction Method for Information-Embedded Concrete by Using Color Control Technique
○Haruka YAGIASAWA and Satoshi FUJIMOTO
- 102** H106 A Basic Study on Laser Engraving of Japanese Cedar
○Takuma TOGO, Reo YASUE and Eisuke MITSUDA
- 103** H114 Analysis of Decision-Making Process in Steel Production Process and Examination of Process Planning Model
○Satoru FURUKAWA, Tomohiro YOSHIDA, Chi NAIYUAN, Noriyuki OKAMOTO and Shuzo FURUSAKA
- 104** R24 Optimization of Truss Structures considering Robustness to Load: Application of modified PSO to multi-objective optimization problem
○Hiroyuki SOGABE
- 105** H31 Characteristics of Optimal Solutions Including Semi-optimal Ones for Five-stories Rigid Frame
○Toju MIYAMOTO and Eisuke MITSUDA
- 106** H49 Optimization of Wall Arrangement Considering Environmental Assessment and Mechanical Performance
○Shuichiro KOMINAMI and Shinnosuke FUJITA
- 107** H100 Application Example of Structural Optimization in an Actual Structure: Optimization of structural elements with genetic algorithm
○Tatsuru MIHASHI and Reika MATSUYAMA

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

AIJISA 2021: The 44th Symposium on Computer Technology of Information, Systems and Applications Program and Venue

Venue Date	#1 Room 1 (HALL & Online) Zoom-1	#2 Room 2 (Multipurpose room 1 & Online) Zoom-2	#3 Room 3 (Multipurpose room 2 & Online) Zoom-3	#4 (Full Online) Zoom-4			
Dec 9 Thu	9:15-9:30 [Hybrid] ▼Opening Address WATANABE Shun (University of Tsukuba) 9:30-12:00 [Hybrid] ▼Keynote Humanitarian Digital Transformation for architects and architectural education Projects and their Consequences Jesse Reiser and Nanako Umemoto (RUR Architecture DPC, Princeton University School of Architecture) What if....."Reflections on architectural education for an unpredictable future Hitoshi Abe (UCLA) Dialogue Coordinator Kaon Ko (Tokyo University of Science) Naomi Matsunaga (Lemon Gasui) 12:00- [Hybrid] Group Photo	\	\	\			
	13:00-16:00 [Hybrid] ▼[Research Workshop] Education for Digital Transformation in Architecture				13:00-15:30 [Hybrid] ▼[OS-I] Design Science in Computational Intelligence and Architecture	12:45-13:45 [Hybrid] ▼3D Modeling and Digital Fabrication 14:00-15:30 [Hybrid] ▼Building Information Modeling and Computer Aided Design	12:30-13:45 [Full Online] ▼City and Regional Planning 14:00-15:30 [Full Online] ▼Architectural Planning and Green Building
	16:15-17:45 [Hybrid] ▼Architecture System and Management				15:45-17:00 [Hybrid] ▼XR and Algorithmic Design	15:45-17:00 [Hybrid] ▼Geographic Information System 17:15-18:15 [Full Online] ▼XR and Visualization	15:45-17:00 [Full Online] ▼Artificial Intelligence and Machine Learning 17:15-18:15 [Full Online] ▼3D Modeling, Building Information Modeling and Computer Aided Design
Dec 10 Fri	9:15-10:45 [Hybrid] ▼[OS-II] Virtual and Mixed Reality for Architectural and Urban Discipline 2021 11:00-12:00 (Setup: 10:45) [Hybrid] Interactive Presentation	9:30-10:30 [Hybrid] ▼Optimization	9:30-10:45 [Hybrid] ▼Artificial Intelligence and Machine Learning	9:30-10:30 [Full Online] ▼Geographic Information System			
	\	13:00-14:30 [Hybrid] ▼City and Regional Planning	13:00-14:45 [Full Online] ▼Digital Fabrication	13:00-14:45 [Full Online] ▼Structure and Optimization			
14:50 [Hybrid] Group Photo Session 15:00-17:30 [Hybrid] ▼Keynote DX in Architecture and Urbanism The future realized by 3D city models "PLATEAU" Yuya Uchiyama (Ministry of Land, Infrastructure, Transport and Tourism) The Forefront of Smart City, Its Value and Use Cases Kazuhisa Kumano (Dassault Systemes) DX in Buildings and Cities realized by Digital Twin Ryota Ieiri (Construction IT World) Dialogue Coordinator KURATA Narito (Tsukuba University of Technology) 17:30-17:50 [Hybrid] Award Ceremony Closing Address	\	\	\				