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Autore	Turrin Michela
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Soggetti	Computer-aided engineering Artificial intelligence Software engineering Computer engineering Computer networks Computer science - Mathematics Computer-Aided Engineering (CAD, CAE) and Design Artificial Intelligence Software Engineering Computer Engineering and Networks Mathematics of Computing
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Nota di contenuto	Algorithmic Architectural Design -- The Marching Shape 3D: Extensions of the Ice Ray Shape Grammar -- Between System and Improvisation: The Design Language of Donald Judd's "100 untitled works in mill aluminum" -- Illustrating Algorithmic Design -- AI-powered Architectural Ideation -- Architectural Sketch to 3D Model: An Experiment on Simple-Form Houses -- Towards Human-AI Collaborative Architectural Concept Design via Semantic AI -- Use of

Language to Generate Architectural Scenery with AI-Powered Tools -- The house that looked like it should collapse. Natural language processing for architectural design -- The house that looked like it should collapse. Natural language processing for architectural design -- Performance-based Design -- Enabling flexible architectural design re-representations using a phenotype-based strategy -- Expanding performance-driven parametric design spaces through data streams -- Design Ranking Method for Many-Objective Evolutionary Optimization -- Optimization Strategies of Architecture and Engineering Graduate Students: Responding to Data During Design -- Wieringa Surface: The Implementation of Aperiodicity into Architectural Acoustics -- Urban Models and Analysis -- Cost-Effective 3D Urban Massing Reconstruction of Public Aerial LiDAR Scans -- Fine-Grained Long-Term Analysis of Resurgent Urban Morphotypes -- Street Voids: Analyzing street-level walkability based on 3d morphology and remotely accessible urban data -- Visualizing invisible environmental data in VR: Development and implementation of design concepts for communicating urban air quality in a virtual city model -- Urban Design -- Transforming Large-Scale Participation Data through Topic Modelling in Urban Design Processes -- AI-assisted exploration of the spirit of place in Chinese gardens from the perspective of spatial sequences -- A parametric tool for outdoor shade design: harnessing quantitative indices and visual feedback for effective and efficient climatic design of streets -- Urban Shaderade. Building Space Analysis Method for Energy and Sunlight Consideration in Urban Environments -- Design Space Recommendation: Assisting Users To Manage Complexity In Urban Design Optimisation -- Digital Design, Materials and Fabrication -- Augmented Performative Design: a workflow utilizing augmented reality for structurally stable masonry design -- A Design-to-Fabrication Workflow for Free-Form Timber Structures using Offcuts -- Towards an AI-Based Framework for Autonomous Design and Construction: Learning from Reinforcement Learning Success in RTS Games -- A System for Truss Manipulation with Relative Robots: Designing and Prototyping HookBot -- Material-in-the-loop fabrication: A vision-based adaptive clay 3D printing workflow on indeterminate sand surfaces -- Biologically Informed Design - Towards Additive Biofabrication with Cyanobacteria -- Minimum mass cast glass structures under performance and manufacturability constraints -- Spatial Information, Data and Semantics -- A Semantic Spatial Policy Model to Automatically Calculate Allowable Gross Floor Areas in Singapore -- Building Information Validation and Reasoning using Semantic Web Technologies -- A Visual Support Tool for Decision-Making over Federated Building Information -- Building Data Analysis, Visualisation, Interaction -- BIMThermoAR: Visualizing Building Thermal Simulation Using BIM-based Augmented Reality -- A framework for monitoring and identifying indoor air pollutants based on BIM with IoT sensors -- Coupling Co-Presence in Physical and Virtual Environments toward Hybrid Places -- Social Signals: An Adaptive Installation for Mediating Space during COVID-19 and Beyond -- Quantifying occupant behavior uncertainty in spatio-temporalvisual comfort assessment of national fitness halls: A machine learning-based co-simulation framework -- Building Massing and Layouts -- Topological Operations: A New Method Toward Retrievable Design Operations -- A Physics-based Constraint Solver for the Site Layout Optimization of Non-convex Buildings with Multiple Requirements -- A Physics-based Constraint Solver for the Site Layout Optimization of Non-convex Buildings with Multiple Requirements -- An Integrated and Interactive 3D Space Planning Framework Considering Collective Multi-

	Criteria Optimization Based on Multi-Agent Constraints Solving -- Demand vs design – comparing design proposals to "new work" – based spatial requirements -- The Impact of Spatial Layout on Orientation and Wayfinding in Public Housing Estates Using Isovist Polygons and Shape Matching Algorithms.
Sommario/riassunto	This book includes the refereed Selected Papers of the 20th International Conference on Computer-Aided Architectural Design. INTERCONNECTIONS: Co-computing Beyond Boundaries, CAAD Futures 2023, held in Delft, The Netherlands, in July 5–7, 2023. The 43 full papers included in this book were carefully reviewed and selected from 144 submissions. They were organized in topical sections as follows: algorithmic architectural design; AI-powered architectural ideation; performance-based design, urban models and analysis; urban design; digital design, materials and fabrication; spatial information, data and semantics; building data analysis, visualisation, interaction; and building massing and layouts.