ACADIA 2024 DETAILED SESSIONS SCHEDULE

PAPER SESSION 01		
Thursday 14th of November **9:00 AM** **Scale:** Medium		

Session Chair: Kory Bieg	TITLE	AUTHORS
	Living Knitwork Pavilion: Soft Responsive Architectural Space with Functional Textiles and Integrated System	Irmandy Wicaksono, Alfonso Parra Rubio, Tongge Yu, Judyta Maria Cichocka, Gabriela Bila Advincula, Sam Chin, Manaswi Mishra, Joseph
	Breakwater Enhancement: Redesign Tetrapod Structures For Resilient Coastal Environments And Marine Ecosystem Rehabilitation	Thanut Sakdanaraseth, Jenny Sabin, David Costanza
	Integrated and Tailored Thermal Insulation through Gradient Multimaterial Additive Manufacturing for Masonry Architectural Components	Teng Teng, Yefan Zhi, Masoud Akbarzadeh
	Enhancing Confidence and Daily Engagement in Older Adults with MCI: Design and Usability Assessment of VitaTable	Mingming Zhao, Jiwen Zhong, Danqing Xie, Yichong Xu
	Controlled Anisotropy: A Design-to-Assembly Method for Resource-Efficient Timber Structures with Fibrous Joints	Tzu-Ying Chen, Simon Treml

PAPER SESSION 02		
Thursday 14th of November **10:45 AM** **Scale:** Large		

Session Chair: Biayna Bogosian	TITLE	AUTHORS
	3D printing of a multi-performative facade: Assessment of air permeability, water tightness, wind loads, and impact resistance	Ina Cheibas, Ringo Perez Gamote, Ena Lloret-Fritschi, Kilian Arnold, Andreas Luible, Fabio Gramazio, Matthias Kohler
	Question Answering for Decision-making in Green Building Design: A Multimodal Data Reasoning Method Driven by Large Language Models	Yihui Li I, Xiaoyue Yan I, Hao Zhou II, Borong Lin III
	Leveraging Vision-based Machine Learnging for Auttomated Urban Architectural Analysis: A CNN Approach Using Satellite Imagery	Coral Hamo Goren, Jacob Yasha Grobman, Guy Austern
	Direct-Delivery of Pose (Position and Orientation): Human-Robot Workflows in the Shop and Field	H. Burcin Nalinci, Nathan Barnes, Dan Rothbart, Vahid Koliyaee
	Data Translations: Uncovering Stories of Software Use through Born-Digital Files	Eliza Pertigkiozoglou

PAPER SESSION 03		
Thursday 14th of November **2:30 PM** **Scale:** Small		

Session Chair : Daniel Kohler	TITLE	AUTHORS
	Bridging Pixels and Fabrication: Enhancing Accessibility in CNC Knitting for Architectural Design	Nikoletta Karastathi, Shylaja Regunathan, David Doria, Tim Walpole, Marjan Colletti
	Capturing Motion, Tracing Developments, Creating Space - An Exploration about Motion Capture Methodologies in Architecture	Hendrik Wiese, Jan Philipp Drude, Mirco Becker
	Adaptive Milling in Anisotropic Materials Empowered by Machine Learning: Wood Fibers as Milling Guideline for Quality	Lucas Gottschild, Soroush Garivani, Alicia Nahmad Vazquez
	Optimization Research on the Hygrothermal Performance of Bamboo Woven Mud Walls Based on GA-BP Neural Network with Small Sample Data	Yixi Wang, Xianglei Hu
	Thermoplastic Fused Granulate Deposition Blowforming: A Compound Robotic Method for Moldless Blowforming	Shenaia Turner, Ecem Karaduman, Riddharth Jain, Renhu Wu, Jeffrey Anderson, Nathan King, Robert Stuart-Smith
	Luminosity, Labor, and Liability: Innovating Rural Spaces with Additive Manufacturing and Augmented Reality	Shelby Doyle, Jacob Gasper, Jamie Craine, Nick Senske, Hugh Soward

PAPER SESSION 04		
Thursday 14th of November **4:15 PM** **Scale:** X-Large		
Session Chair: Russel Loveridge	**TITLE**	**AUTHORS**
	Fast Geometry Optimizations for Architectural Workflows: _A Case Study on the Computational Geometry of High-Rises_	Marios Tsiliakos
	Urban Computation in the AEC Industry	Fani Kostourou, Jorge Sainz de Aja Curbelo, Andy Watts
	Towards a Digital Vernacular: Framework for Localized Biocomposite 3D-Printing with Natural Fibers	Daniel Tish, Amelia Gan, Sophia Cabral, Martin Bechthold
	Across scales: Hierarchical Urban Graph for Neighborhoods Partition and Energy End-use Stability	xinwei zhuang, Xiaolei Chu, Junting Liang, Pinru Zhu, Jeremy Chen, Marta Gonzalez
	Enhancing Coastal Morphologies: Adaptive Reshaping of Coastline Terrains Using Natural Sedimentation Patterns for Mangrove Root Systems	Meghna Roy, Dana Cupkova, Christine Mondor

PAPER SESSION 05		
Friday 15th of November **9:00 AM** **Scale:** Large		
Session Chair: Immanuel Koh	**TITLE**	**AUTHORS**
	METAVERSITY - Universities in the Metaverse: Designed with/for User Experience	Pia Fricker I, Maya Shpiro, Mahsa Tajalli, Tina Cerpnjak, Mariusz Hermansdorfer, Iliana Papadopoulou
	Sectional Sampling – Controlled Generation of High-Resolution Architecture Design with Diffusion Model and Latent Interpolation	Zheng Fang, Xuechen Li, Mingyang Sun, Runjia Tian
	Mediating Modes of Thought: Large Language Models for design scripting.	Moritz Rietschel, Guo Fang, Kyle Steinfeld
	A Multi-Scale Feature Fusion Machine Learning Method for Predicting Urban Resilience to Compound Water Disasters	Hehan Zhou, Hehan Zhou, Wenyu Hou, Peijun Lu, Xin Wang
	Controllable Multi-Scenario Campus Layout Generation and Evaluation Based on Stable Diffusion Models	Han Li, Yubo Liu, Qiaoming Deng
	Integrating Game Engines for Data-Driven, Performance-Aware Architectural Design: A Gamified Framework for Non-Expert Decision-Making	Arman Khalilbeigi Khameneh, Alicia Nahmad Vazquez

PAPER SESSION 06		
Friday 15th of November **9:00 AM** **Scale:** Medium		
Session Chair: Andy Watts	**TITLE**	**AUTHORS**
	Split Design for Digital Fabrication of Building Modules: A Sub-Modularization Approach	Yi Zhang, Ziyu Peng, Tan Tan, Tongyu Fu
	Applying Principles from Object-Oriented Programming in Digital Fabrication to Achieve More Efficient and Adaptable Product Customizations	Cody Tucker
	Shaping Passive Dehumidification of Material Systems for Hot and Humid Climates: Computational Approach to Integrating Isothermal Membrane Assisted Dehumidification (IMAD)	Nandan Bhusry, Dana Cupkova
	Case Study of an Integrated Parametric Approach in Affordable Housing	August Miller
	An Integrated and Designer-Friendly Approach for Performance-Based Design in the Early Design Phases: A User Study and System Proposal	Ahmed M. Abuzuraiq, Esmaeil Mottaghi, Halil Erhan, Victor Okhoya, Spyridon Ampanavos, Marcelo Bernal, Cheney Chen, Yehia Madkour
	Leaving the lab – Strategies for large scale application of Microbially Induced Calcite Precipitation on Textile Scaffolds	Bastian Beyer, Daniel Suárez

PAPER SESSION 07		
Friday 15th of November **2:30 PM** Scale: Large		
Session Chair : Annalisa Meyboom	**TITLE**	**AUTHORS**
	Augmented Reality-Assisted Method for Real-Time Dynamic Task Sharing in Human-Robot Collaboration in Construction	Alireza Fazel Jr., Wesley McGee Sr.
	The Crown Jewels: Algorithmic design of rubble trusses for the Arabian Gulf	Latifa Alkhayat, Keith Lee, Caitlin Mueller
	Multi-Axis Timber Tectonics: Robotic Fabrication of a Freestanding, Doubly Curved, Reciprocal Frame Structure	John Nguyen, Nicholas Hoban, Rahul Sehijpaul, Shannon Hilchie, Brady Peters
	Animaquina: A Framework for Democratizing Architectural Robotics	Luis A Pacheco
	Housing Passports: a semantic knowledge graph for Canadian residential buildings to support a circular economy	Naomi Keena, Avi Friedman, Mojtaba Parsaee, Daniel R. Rondinel-Oviedo

PAPER SESSION 08		
Friday 15th of November **2:30 PM** Scale: Small		
Session Chair : Benjamin Ennemosser	**TITLE**	**AUTHORS**
	(Un)fitting Aggregations: Material-dependent Production and Spielraum of Distinct Vulcanized Fiber Pieces	Lukas Allner, Karolin Schmidbaur, Gonzalo Vaíllo
	Adaptive Midsole: Granular Convection for Use-Activated Custom Footwear	Thaddeus Lee, Il Hwan Kim, Iain Hannah, Kimball Kaiser, Hamilton Forsythe, Jared Laucks, Skylar Tibbits
	Bending Form in Extended Reality: A Gesture-Based Workflow of Chair Design and Fabrication	Wu, Yao Zhang, Philip F. Yuan
	Bridging the Gap: Exploring a Design-via-Making Approach through Digital Guidance Systems	Peiyu Hu
	GrowFill: Generative Adaptive Infill for Additive Manufacturing	Chenming He, Panagiotis Michalatos, Jenny E. Sabin

PAPER SESSION 09		
Friday 15th of November **4:15 PM** Scale: Medium		
Session Chair : Edyta Augustynowicz	**TITLE**	**AUTHORS**
	Cultivating Computationally: Parametric Plant Growth Dynamics in Multispecies Design	James Barnes, Audrey Barnes
	The Role of Parametric Design and Community Participation in the Development of On-Reserve, Culturally Appropriate, Indigenous Housing. The Case Study of Siksika Nation	Mauricio Soto Rubio, Liam McNairn
	Vertical Wetland: Robotic 3D Printing of Urban Vertical Green Systems for Biodiversity	Jutang Gao, Mania Aghaei Meibodi, Archit Goyal, Yichuan Li, Biyang Yan
	Real-Time Data Collection to Derive Layer Geometry-related Parameters and Deformation in Non-Planar 3D Concrete Printing	Yuxin Lin, Aghaei Meibodi Mania
	Digital Upcycling: Transforming Waste Wood for Circular Construction through Digital Strategies	Erik Zanetti I, Vincent Witt, Javier Fuentes, Moritz Dörstelmann

PAPER SESSION 10 (Projects)	
Friday 15th of November	
4:15 PM	
Scale: Projects	

Session Chair : Jenny Sabin	TITLE	AUTHORS
	Plume	Kory Bieg, Clay Odom
	Unfamiliar as Ornament: Additive Manufacturing for Reduced-Waste Metal Casting	Riley Studebaker
	Hallucinationism: Ducks, Sheds, and their Mutant Offspring within Generative AI's Latent Space	Shawn Chiki, Kearon Roy Taylor
	In Deep Water: An Immersive Mixed Reality Experience for Exploratory Urban Environmental Data Visualization and Public Engagement	Biayna Bogosian
	AI-Enabled Participatory Design Powered by Multimodal Experiential Data	Ray Wang
	Woven dynamics: Redefining Spatial Adaptivity	Moon-Young Jeong, Maria Matheou, Lucio Blandini
	Co-weaving Biofilms	Bastian Beyer, Iva Resetar
	Bio-Vault: Optimizing Global Warming Potential (GWP) and Compressive Strength in the Design-Build of Bio-based Cementitious Composite Assembly	Myrk Orvsson, Calum Molitor-Dyer, James Forren
	Entangled Workflows between Architecture and Animation	Julie Kress
	AR Glulam: High-Precision Augmented Reality Using Multiple Fiducial Markers for Glulam Beam Fabrication in an Industrial Setting	Alexander Htet Kyaw, Arvin Xu, Gwyllim Jahn, Cameron Newnham, Nick van den Berg, Sasa
	Augmenting Reflectors – Fabricating Reflectors through Robotic Single Point Sheet Forming (SPSF)	Yael Erel, Claire Moriarty
	Neural Monobloc Black	Immanuel Koh
	A Socio-Technical Materialization of Micro-Housing	Richard Garber, Nicole Robertson

PAPER SESSION 11	
Saturday 16th of November	
9:00 AM	
Scale: Small	

Session Chair : Vernelle Noel	TITLE	AUTHORS
	Lessons from Tattooing Architecture: A Situated Feminist Approach to Computational Design Pedagogy	Rachel Dickey
	LLMto3D - Generation of Parametric Objects using Large Language Models	Bat-El Hizmi, Abraham Shkolnik, Guy Austern, Yoav Sterman
	Tectonics of the Latent Space	Matias del Campo, Sandra Manninger
	Neural Radiance Field for Generative 3D Facade Segmentation	Immanuel Koh, Nuozhi Liu
	Synthesizing User Preferences from Supplier Catalogs: A Large Multimodal Models Framework for Tailored Interior Design Solutions	Zheyuan Kuang, Jiaxin Zhang, Xin Luo, Yuchen Xie, Yunqin Li
	Enhancing Confidence and Daily Engagement in Older Adults with MCI: Design and Usability Assessment of VitaTable	Mingming Zhao, Jiwen Zhong, Danqing Xie, Yichong Xu

PAPER SESSION 12 (Projects)	
Saturday 16th of November **9:00 AM** **Scale:** Projects	

Session Chair : David Gerber	
TITLE	**AUTHORS**
Form Freed	Giulio Masotti Sr.
Pitch House – A Customizable Housing System	Brian Dale, Adam Wagoner
Main Street Metrics	Omair Z Chaudhry, J Cameron Parkin, Joyce Tang, Caylee Dyck
BioHedra	Diego Camargo, Eliades Perez, Bruna Barros, Pedro Fernandez, Manuela Leyva, Ana Mesa Frauca, Cahil Patel, Felicitas Retes
Behavioural Skins	Oliver Thomas Hamedinger, Jade Bailey
PolyTile 4.0: Self-healing Ceramic Tiles	Chenming He, Zeyu Li, Lucy Xiaorui Wang, Dong Wang, Dan Luo, Jenny E. Sabin
MycoFlame: In care of forest biomes and wildfire resiliency	Dana Cupkova, Nandan Bhusry, Jil Berenblum, Rovina S. George
Bamboo Pavilion: Gesture Recognition for Site Parameters Input and Design Generation	Leslie Lok, Weishun Xu
Gestural & Generative: A project in Human-AI collaborative sketching, physicalized by robotic fabrication	Humbi Song
Mayfair Residence Façade	Andre Caradec, Andrei Hakhovich
CERALUNG: Bridging Computational Design and Ecological Innovation Through 3D Printed Ceramics and Microalgae	Jillian Leedy, David Barbeau, Christian Filip, Paresh Patel, Joharatulmajd Raaiq, Prerana Dhadoti, Baizhen Yu
Blendform: Augmented Reality Assisted Craft Assembly	Lee-Su Huang, Collin T Rohr, Michael A Dieffenthaller, Tessa M Register, Zahra Zare, Gregory T Spaw
Solarium	Hayden Pattullo, Damon Hayes Couture

PAPER SESSION 13	
Saturday 16th of November **1:45 PM** **Scale:** Medium	

Session Chair : Dana Cupkova	
TITLE	**AUTHORS**
FLIM-FLAMS: Force-Lifted, Timber, Flat-Laminated, Shells	Neal Lucas Hitch, Leslie Lok, Sasa Zivkovic
A new structural and assembly system for load bearing, architectural "deep-skins"	Andrei Nejur, Szende Szentesi, Reza Yaghavirard, Thomas Balaban, Patrick Herron
Variable Pneumatic Thermoforming: Robotic Thermal Welding for Volumetric Thermoplastic Building Envelope Panels	Andres Feng Qian, Zai Shi, Ying Xuan Tan, Yukun Zhuang, Renhu Wu, Jeffrey Anderson, Nathan King, Robert Stuart-Smith
Clay Acoustic Patterns	Ana Ascic, Maria Smigielska, Ioanna Mitropoulou, Achilleas Xydis
BioKnit Arch: Precision Knit Mycelium Biofabrication	Jane Scott, Armand Agraviador, Ben Bridgens, Oliver Perry, dilan Ozkan, Romy Kaiser
Design for Uncertainty: Circular Construction with Irregular Wood Materials	Edyta Augustynowicz, Dominik Nüssen, Martin Schulte, Joaquim Escoda Llorens, Maria Smigielska, Katharina Lindenberg