Taro Narahara

Associate Professor (Tenured) · Hillier College of Architecture and Design · New Jersey Institute of Technology
Computational Design · AI / Machine Learning · Spatial Intelligence · Immersive Media
narahara@njit.edu | Registered Architect (New York and Japan)

RESEARCH PROFILE

Research and creative practice at the intersection of artificial intelligence, computational design, architectural and urban analytics, and immersive media. Work includes machine-learning models of subjective spatial quality, multimodal interpretation of floor plans, graph-based spatial analysis, and interactive spatial experiences. Publications include IEEE Transactions on Multimedia, Computers & Graphics, and ACM SIGGRAPH; professional practice includes the Mori Art Museum (Gluckman Mayner Architects).

ACADEMIC APPOINTMENTS

2016–present	**Associate Professor (tenured),** New Jersey Institute of Technology (NJIT), Hillier College of Architecture and Design; joint appointment in Architecture and Art + Design.
2010–2016	**Assistant Professor (tenure track),** NJIT, Hillier College of Architecture and Design.
2026/2019	**Visiting Scholar,** Department of Information and Communication Engineering, Graduate School of Information Science and Technology, University of Tokyo (Toshihiko Yamasaki Laboratory).
2018–2019	**Academic Guest,** Institute of Technology in Architecture (ITA), ETH Zurich.
2024–present	**Overseas Adviser,** Institute of Science Tokyo (formerly Tokyo Institute of Technology).
2007–2010	**Research and Teaching Fellow,** Harvard Graduate School of Design; robotic fabrication, algorithmic architecture, digital design.
2009–2010	**Workshop Instructor,** Harvard GSD; Processing and Rhino scripting.
2006–2007	**Teaching Assistant,** MIT School of Architecture and Planning; geometric modeling and advanced design studio.

EDUCATION

2010	**Doctor of Design (DDes), Harvard University Graduate School of Design.** Dissertation: Self-Organizing Computation: A Framework for Generative Approaches in Architectural Design. Adviser: Martin Bechthold. Peter Rice Prize; Digital Design Prize.
2007	**Master of Science in Architecture Studies, Massachusetts Institute of Technology.** Design and Computation. Thesis: The Space Re-Actor: Walking a Synthetic Man through Architectural Space. Adviser: Takehiko Nagakura.
1997	**Master of Architecture,** Washington University in St. Louis.
1994	**Bachelor of Science in Mathematics,** Waseda University, Tokyo.

SELECTED AWARDS AND RECOGNITION

2026	Audience Prize, 13th 1minute Projection Mapping Competition / TOKYO LIGHTS, Tokyo, for Infinite Dialogue (highest public vote among 18 finalists). [Details]
2026	Finalist, Architizer Vision Awards, Experimental Video category, for Infinite Dialogue. [Details]
2026	Honorable Mention, Open-Call Exhibition, Shoto Museum of Art, Tokyo.
2025	Special Mention, Architizer Vision Awards, Experimental category. [Details]
2025	Thematic Award, Architecture in Perspective 39 (AIP39), American Society of Architectural Illustrators (ASAI). [Details]
2025	Excellence Award, Shoto Museum of Art Open-Call Exhibition, Tokyo. [Details]
2024	Honorable Mention, AI Museum International Design Competition (with Oyku Akcin). [Details]
2022	Honorable Mention, AEC Tech NYC Hackathon, GraFix (team award). [Details]
2021	IDR Excellence Award, National Institute of Informatics (NII), Japan (with collaborators).
2020	Human Communication Award, Institute of Electronics, Information and Communication Engineers (IEICE), Japan.
2019	Media Experience and Virtual Environment Award, IEICE, Japan.
2016	Excellence in Research Award, New Jersey Institute of Technology.

2010 Digital Design Prize, Harvard GSD.

2009 Peter Rice Prize; Penny White Prize, Harvard GSD.

Student Awards (as supervisor)

2026 ARCC King Student Medal for Excellence in Architectural + Environmental Design Research — Muxin Jia (PhD).

2022 ARCC King Student Medal — Zhongming Peter Zhang (undergraduate research).

PEER-REVIEWED PUBLICATIONS

Journal Articles

Jia, M., Hu, X., & Narahara, T. (2026). Learning dependency structures of urban vitality at the census-block level using Bayesian networks and multi-source data. Sustainable Cities and Society, 151, 108010. https://doi.org/10.1016/j.scs.2026.108010

Jia, M., Liu, A., & Narahara, T. (2024). The Integration of Dual Evaluation and Minimum Spanning Tree Clustering to Support Decision-Making in Territorial Spatial Planning. Sustainability, 16(10), 3928. https://doi.org/10.3390/su16103928.

Narahara, T., & Yamasaki, T. (2023). Subjective Functionality and Comfort Prediction for Apartment Floor Plans and Its Application to Intuitive Online Property Search. IEEE Transactions on Multimedia (TMM). vol. 25, pp. 6729-6742. https://doi.org/10.1109/TMM.2022.3214072 (Accepted in 2022 Oct.; arXiv:2202.12799 2022 Feb.). [PDF]

Narahara, T. (2015). Design exploration through interactive prototypes using sensors and microcontrollers. Computers & Graphics: An International Journal of Systems & Applications in Computer Graphics, 50, 25-35. https://doi.org/10.1016/j.cag.2015.04.008 [PDF]

Narahara, T. (2010). Designing for constant change: An adaptable growth model for architecture. International Journal of Architectural Computing (IJAC), 8(1), 29–40. https://doi.org/10.1260/1478-0771.8.1.29 [PDF]

Manuscript Under Revision

Narahara, T. (2026). Generative AI as a Design Partner in Architectural Education: Creative Exploration and Iterative Development. IEEE Computer Graphics and Applications, Education Department; revision in preparation following peer review.

Refereed Conference Papers and Proceedings

Narahara, T., & Yamasaki, T. (2026). Improving GPT-Based Subjective Floor Plan Evaluation with Structural Cue Correction. IEEE MIPR 2026, 132–138. https://doi.org/10.1109/MIPR70517.2026.00029

Narahara, T., & Yamasaki, T. (2026). Analyzing the Structural Reasoning Capabilities of Multimodal LLMs for Residential Comfort Estimation from Floor Plan Images. 29th Meeting on Image Recognition and Understanding (MIRU 2026), Nagasaki, Japan.

Jia, M., Zhang, K., & Narahara, T. (2026). Human-Informed Urban Vitality: Integrating Form, Perception, and Design via Heterogeneous Graph Learning. CAADRIA 2026, 3, 573–582. https://doi.org/10.52842/conf.caadria.2026.3.573

Zhang, K., Jia, M., & Narahara, T. (2026). Measuring Architectural Semantics in Text-to-Image Generation: A Multi-Level Human-Computer Alignment Framework. CAADRIA 2026, 1, 703–712. https://doi.org/10.52842/conf.caadria.2026.1.703

Narahara, T., & Yamasaki, T. (2026). A Comparative Analysis of Human and Large Language Model Evaluations of Real Estate Floor Plans: Visual Impression vs. Structural Understanding. Proceedings of the Annual Conference of the Japanese Society of Artificial Intelligence (JSAI), JSAI 2026. https://doi.org/10.11517/pjsai.JSAI2026.0_3K2OS27b01

Narahara, T. (2025). AI-Augmented Architectural Design: Enhancing Creativity and Workflow with Generative Models. In Proceedings of the Special Interest Group on Computer Graphics and Interactive Techniques Conference Educators Forum (SIGGRAPH 2025) (pp. 1-2). https://doi.org/10.1145/3721242.3734016

Jia, M., Zhang, K., & Narahara, T. (2025). Examining the Influence of Isovist Geometry and Visual Perception on Spatial Diversity along Street Canyons. CAADRIA 2025, 4, 419–428. https://doi.org/10.52842/conf.caadria.2025.4.419 [PDF]

Zhang, K., Jia, M., & Narahara, T. (2025). Evaluating Window-to-Wall Ratio in Generative AI Architectural Design: Insights from SHAP Analysis and Predictive Modeling. ANNSIM 2025; Simulation Series, 57(1), 606–617. [IEEE Xplore] [PDF]

Ogura, A., Fukuda, T., Yabuki, N., & Narahara, T. (2025). Multi-Story Floor Plan Generation from Building Volumetric Design Using Graph Neural Network. ICCBEI 2025, Kalpa Publications in Computing, 22, 756–769. https://doi.org/10.29007/7sdt [PDF]

Narahara, T. (2025). On the Immersive Pavilion Exhibition at the SIGGRAPH International Conference. VR and MR Technologies in Architecture and Urban Design, The Annual Convention for the Architectural Institute of Japan (AIJ), Fukuoka, Japan, Sep 10-12.

Vincenty, M., Grebler, J., Piza, C., Dalgo, O., & Narahara, T. (2024). Props and Rocks: Passive Haptic Mixed Reality for Navigating Far-off Worlds. In ACM SIGGRAPH 2024 Immersive Pavilion. https://dl.acm.org/doi/10.1145/3641521.3664404 (Also, listed in Exhibitions)

Narahara, T., Moulaii, M., & Mostafavi, M. (2024). Reimagining Muqarnas: Exploring Generative Design for Innovative Patterns in Iranian-Islamic Architecture. International Conference for The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA). https://doi.org/10.52842/conf.caadria.2024.2.293 [PDF]

Jia, M., & Narahara, T. (2024). Characterizing Residential Building Patterns in High-Density Cities Using Graph Convolutional Neural Networks. International Conference for The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA). https://doi.org/10.52842/conf.caadria.2024.2.039 [PDF]

Jia, M., & Narahara, T. (2023). Spatial Analytics of Housing Prices with User-Generated POI Data: A Case Study in Shenzhen. Proceedings of the 28th International Conference for The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA). https://doi.org/10.52842/conf.caadria.2023.1.635 [PDF]

Riether, G., & Narahara, T. (2023). AI Tools to Synthesize Characteristics of Public Spaces. Proceedings of the 41st Association for Education and Research in Computer-Aided Architectural Design in Europe (eCAADe) Conference. https://doi.org/10.52842/conf.ecaade.2023.2.831 [PDF]

Kitabayashi, R., Narahara, T., & Yamasaki, T. (2022). Graph Neural Network Based Living Comfort Prediction Using Real Estate Floor Plan Images. In Proceedings of the 4th ACM International Conference on Multimedia in Asia (ACM MM Asia). https://doi.org/10.1145/3551626.3564970 [PDF]

Narahara, T. (2022, August). Presenting Architectural Research in VR. ACM SIGGRAPH 2022 Educator's Forum. https://doi.org/10.1145/3532724.3535602 [PDF]

Zhang, Z. P., & Narahara, T. (2022). Sketch to Build: An Intuitive Design Platform for Sustainable Housing Complexes. Annual Modeling and Simulation Conference (ANNSIM), The Symposium on Simulation for Architecture and Urban Design (SimAUD), 537-548. https://doi.org/10.23919/ANNSIM55834.2022.9859388 [PDF]

Narahara, T. (2022, April 11). Kurashiki Viewer: Qualitative Evaluations of Architectural Spaces Inside Virtual Reality. International Conference for The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), 1(1), 32. https://doi.org/10.52842/conf.caadria.2022.1.011 [PDF]

Narahara, T., Wang, X., & Yamasaki, T. (2021). Graph-Based Analysis of a Large-scale Attractiveness Dataset for Real Estate Floor Plans. Proceedings of the Annual Conference of the Japanese Society of Artificial Intelligence (JSAI), Volume JSAI2021, 35th. https://doi.org/10.11517/pjsai.JSAI2021.0_4F3GS10n04 [PDF]

Schnabel, M. A., et al. (2021). Virtual World16 - Virtual Design Collaboration for the Intersection of Academia and Industry. Proceedings of the 26th CAADRIA Conference - Volume 2, The Chinese University of Hong Kong and Online, Hong Kong, 29 March - 1 April, 203-212. https://doi.org/10.52842/conf.caadria.2021.2.203

Narahara, T., Wang, X., & Yamasaki, T. (2020, August 2-5). Attractiveness Prediction for Real Estate Floor Plans using Graph Analysis. The 23rd Meeting on Image Recognition and Understanding (MIRU), virtual online/Japan. (In Japanese, Paper, and Poster) [PDF]

Narahara, T., Wang, X., & Yamasaki, T. (2020, June 9-12). Construction and Analysis of a Large-scale Attractiveness Dataset for Real Estate Floor Plans based on Users' Attributes. JSAI 2020: The 34th Annual Conference of the Japanese Society for Artificial Intelligence, virtual online/Japan. https://doi.org/10.11517/pjsai.JSAI2020.0_2P6GS1305 [PDF]

Narahara, T., Wang, X., & Yamasaki, T. (2020). A Comparative Study of Data-driven Approaches for the Generation of Floor Plans in Japanese Apartments. The 10th International Workshop on Image Media Quality and its Applications. [PDF]

Narahara, T. (2019, October 15-18). A Preliminary Study on Attractiveness Analysis of Real Estate Floor Plans. 2019 IEEE 8th Global Conference on Consumer Electronics (GCCE), Osaka, 454–455. [PDF]

Narahara, T. (2019, September 9-13). Megastructure: Past, Present, and Future. Architecture in the Age of the 4th Industrial Revolution, The eCAADe + SIGraDi Conference, Porto, Portugal, 637-644. https://doi.org/10.52842/conf.ecaade.2019.2.637 [PDF]

Narahara, T., Wang, X., & Yamasaki, T. (2019, August 29-30). What is the key to attracting people to apartments? Construction and analysis of an attractiveness dataset for real estate floor plans. Technical Committee on Media Experience and Virtual Environment (MVE), The Institute of Electronics, Information and Communication Engineers (IEICE), Nagoya, Japan. (MVE Award for the best paper at the 2019 conference) (2020 HC Award for the annual best paper in the MVE area). (In Japanese).

Narahara, T., & Yamasaki, T. (2019, July 29 - August 1). Creation and analysis of a dataset for attractiveness of real estate floorplans based on subjective evaluations. The 22nd Meeting on Image Recognition and Understanding (MIRU), Osaka, Japan. (In Japanese, Paper, and Poster). [PDF]

Narahara, T. (2019, September 3-6). Home as a sacred place in an offline environment. VR and MR Technologies in Architecture and Urban Design, The Annual Convention for the Architectural Institute of Japan (AIJ), Kanazawa, Japan.

Narahara, T., & Yamasaki, T. (2019, March 14-15). Reenactments of game-play styles in VR through personal bots: Speculative visions for applications of attractiveness computing. Technical Committee on Media Experience and Virtual Environment (MVE), The Institute of Electronics, Information and Communication Engineers (IEICE), Kagoshima, Japan.

Narahara, T., & Kobayashi, Y. (2018, December 4-7). Personalizing homemade bots with plug-and-play AI for STEAM education. SIGGRAPH Asia 2018 Technical Brief, Tokyo, Japan. https://doi.org/10.1145/3283254.3283270

Narahara, T. (2018, August 12-16). Creating the Unreal: Speculative visions for future living structures. SIGGRAPH 2018 Talks (The 45th International Conference and Exhibition on Computer Graphics and Interactive Techniques), Vancouver, Canada. https://doi.org/10.1145/3214745.3214799 [PDF]

Narahara, T. (2017, September 20-22). Collective construction modeling and machine learning: Potential for architectural design. Proceedings of the 35th Association for Education and Research in Computer Architectural Design in Europe (eCAADe) Conference, Sapienza University of Rome, Rome, Italy, 341-348. https://doi.org/10.52842/conf.ecaade.2017.2.341 [PDF]

Narahara, T., Abbruzzese, K., & Foulds, R. (2015). Haptic collaboration: Biomedical engineering meets digital design. SIGGRAPH 2015 Talks, Los Angeles, CA. https://doi.org/10.1145/2785585.2792520 [PDF]

Narahara, T., & Kobayashi, Y. (2015). Crowd Mapper: Projection-based interactive pedestrian agents for collective design in architecture. Proceedings of the 33rd Association for Education and Research in Computer Aided Architectural Design in Europe (eCAADe) Conference, The Vienna University of Technology, Vienna, Austria, 191-200. https://doi.org/10.52842/conf.ecaade.2015.1.191 [PDF]

Narahara, T. (2015). A tool kit for architects to create interactive prototypes and digital simulations. Proceedings of the 16th International Computer Aided Architectural Design Futures (CAAD Futures) Conference, Sao Paulo, Brazil, 464.

Narahara, T. (2014, April 7-11). Teaching interactivity: Introducing design students to sensors and microcontrollers. The 35th Annual Conference of the European Association for Computer Graphics (EUROGRAPHICS 2014), Strasbourg, France, 25-32. (Best Education Paper/Presentation).

Narahara, T. (2014, August 10-14). Exploring board game design using digital technologies. SIGGRAPH 2014 Talks, Vancouver, Canada. https://doi.org/10.1145/2619195.2656294

Narahara, T. (2013). A generative approach to robotic fabrication. In R. Stouffs & S. Sariyildiz (Eds.), Proceedings of the 31st eCAADe Conference, Delft University of Technology, Delft, Holland, 1, 673-678. https://doi.org/10.52842/conf.ecaade.2013.1.673 [PDF]

Narahara, T. (2013). Physical prototypes for interactive building technology. In J. R. Dermody & A. Zarzycki (Eds.), Proceedings of the 4th BTES Conference, Bristol, Rhode Island. (The featured project also appeared in IJAC 2010).

Narahara, T. (2013). Co-evolutionary design with robotic devices. Proceedings of The Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), National University of Singapore, Singapore, May 15–18. (The featured project also appeared in eCAADe 2013).

Narahara, T. (2012, March 1-4). Self-organizing strategy: An adaptable growth model for architecture. ACSA 100th Annual Meeting (The Association of Collegiate Schools of Architecture): “Digital Aptitudes,” Host School: Massachusetts Institute of Technology, Boston, MA, USA.

Narahara, T. (2011, October 28-30). A conceptual framework for applications of self-organizing logics in urban design. 2011 PUARL International Conference: "Generative Process, Patterns, and the Urban Challenge," The Portland Urban Architecture Research Laboratory, University of Oregon, Portland, Oregon.

Narahara, T. (2011, November 13-14). Generative applications inspired by emergent behavior. Proceedings of the International Symposium on Algorithmic Design for Architecture and Urban Design, ALGODE TOKYO 2011, Tokyo, Japan.

Narahara, T. (2011, March 10-12). Beyond quantitative simulations: Local control strategy using architectural components. Proceedings of the ACADIA 2011 Regional, Parametricism (SPC), University of Nebraska Lincoln, Lincoln, Nebraska, USA.

Narahara, T. (2010). Form, evolution, and agents: New approaches in spatial design. The 33rd Symposium on Computer Technology of Information, Systems, and Applications organized by Architectural Institute of Japan (AIJ) (In Japanese)

Kobayashi, Y., Terzidis, K., Narahara, T., et al. (2009, June 17-19). World8: International working group for new virtual reality applications in architecture. Proceedings of the CAAD Future09 Conference, “Joining languages, cultures and visions,” Montreal, Canada, 547-556.

Narahara, T. (2009, September 16-19). Bottom-up design inspired by evolutionary dynamics. Proceedings of eCAADe 2009: (Education and Research in Computer Aided Architectural Design in Europe), Computation: The New Realm of Architectural Design, Istanbul, Turkey, 391-398. https://doi.org/10.52842/conf.ecaade.2009.391

Narahara, T. (2008, October). New methodologies in architectural design inspired by self-organization. Proceedings of the Association for Computer-Aided Design in Architecture (ACADIA), Silicon + Skin: Biological Processes and Computation, Minneapolis, USA, 324-331. https://doi.org/10.52842/conf.acadia.2008.324

Narahara, T. (2007, November 15-17). Enactment software: Spatial designs using agent-based models. Proceedings of AGENT 2007: Conference on Complex Interaction and Social Emergence, Argonne National Laboratory (sponsor) and Northwestern University (host), Norris Center, Evanston.

Griffith, K., & Narahara, T. (2007, October 7-9). Standardized algorithms and design descriptions for “one-off” designs. Proceedings of MCPC 2007: World Conference on Mass Customization & Personalization, Massachusetts Institute of Technology (MIT), Cambridge.

Narahara, T. (2007, September 26-29). The space re-actor: Walking a synthetic man through architectural space. Proceedings of the 25th Education and Research in Computer Aided Architectural Design in Europe (eCAADe) Conference, Frankfurt, Germany, 195-202. https://doi.org/10.52842/conf.ecaade.2007.195

Narahara, T., & Terzidis, K. (2006, October 12-15). Multiple-constraint genetic algorithm in housing design. Proceedings of the Association for Computer-Aided Design in Architecture (ACADIA) International Conference, Synthetic Landscapes, Digital Exchange, Louisville, USA, 418-425. https://doi.org/10.52842/conf.acadia.2006.418 [PDF]

Narahara, T., & Terzidis, K. (2006, November 21-23). Optimal distribution of architecture programs with multiple-constraint genetic algorithms. Proceedings of the International Conference, SIGRADI 2006, Post Digital, Santiago, Chile, 293-303.

Book Chapters

Narahara, T. (2015). Architecture Meets Gaming and Robotics: Creating Interactive Prototypes and Digital Simulations for Architects. In: Celani, G., Sperling, D. M., & Franco, J. M. S. (Eds.). Computer-Aided Architectural Design: The Next City–New Technologies and the Future of the Built Environment: 16th International Conference, CAAD Futures 2015, São Paulo, Brazil, July 8-10, 2015. Selected Papers (Vol. 527). Springer (pp. 474-492), (Peer-reviewed in 3 stages) https://doi.org/10.1007/978-3-662-47386-3_26 [PDF]

Narahara, T. (2014). The computer as a tool for creative adaptation: Biologically inspired simulation for architecture and urban design. In Zander, J., & Mosterman, P. (Eds.), Computation for Humanity: Information Technology to Advance Society (1st ed., pp. 69-94). CRC Press, Taylor & Francis Group, LLC. (Peer-reviewed in 2 stages) https://doi.org/10.1201/9781315216751 [pdf, Website]. [PDF]

Narahara, T. (2010). Crowd simulation and interactive device. In Ota, N. (Ed.), Programming for Civil Engineers for VR and Structural Analysis (1st ed., pp. 222-233). Nikkei Business Publications, Inc. (Invited).

Narahara, T. (2010). The space ReActor: Walking a synthetic man through architectural space. In S. Chen, S. Li, & J. Lobel (Eds.), Computational Constructs: Architectural Design, Logic, and Theory (pp. 71-83). The China Architecture and Building Press. (Peer-reviewed) [PDF]

RESEARCH FUNDING AND AWARDS

2022–2025	**Principal Investigator — $50,000.** NSF I-Corps Teams: An Intuitive Design Platform for Sustainable Multifamily Residential Buildings.
2021	**Principal Investigator — $5,000.** NJIT Faculty Research Seed Grant (May): Creation and Analysis of a Large-scale Dataset of Real Estate Floor Plans in US Metropolitan Areas.
2021	**Principal Investigator — $5,000.** HCAD Faculty Research Seed Grant (March): Creation of a Large-scale Dataset of Real Estate Floor Plans in US Metropolitan Areas.
2016–2018	**Co-Principal Investigator — $225,500 (total project).** NSF Major Research Instrumentation: Open-architecture scalable exoskeleton for rehabilitation research (PI: R. Foulds).
2015–2020	**Faculty Investigator — $5 million (total center award).** Rehabilitation Engineering Research Center on Wearable Robots, NJIT / Kessler Foundation (PI: R. Foulds).
2014–2015	**Principal Investigator — $10,000.** NJIT Faculty Seed Grant Initiative: Unity3D for therapeutic gaming and rehabilitation robotics.
2015–2021	**Academic Lead,** Selected NSF I-Corps Site mini-grants on architectural interfaces, photogrammetry, and design-related technology commercialization (see full institutional records).

SELECTED EXHIBITIONS AND CREATIVE WORK

2026	Infinite Dialogue — finalist screening and Audience Prize, TOKYO LIGHTS / 1minute Projection Mapping Competition, Tokyo Metropolitan Government Building, Tokyo.
2026	Infinite Dialogue — Architizer Vision Awards, Experimental Video category, finalist online exhibition.
2026	The Architecture of Obsession — 10th Bi-City Biennale of Urbanism/Architecture (UABB), Hetao Innovation and Technology Center, Shenzhen, China (Jan.–Mar. 2026).
2026	Digital art exhibition, Shoto Museum of Art, Tokyo (Honorable Mention).
2025	Architecture in Perspective 39 (AIP39), ASAI; thematic award exhibition, Tokyo.
2025	JARA Architectural Visualization Exhibition: Global Exchange ASAI39 & JARA, Waseda Gallery, Tokyo.
2025	SURREALITY, Center for Metaverse and Computational Creativity, HKUST (Guangzhou).
2025	Shoto Museum of Art Open-Call Exhibition, Tokyo (Excellence Award).
2024	Props and Rocks: Passive Haptic Mixed Reality for Navigating Far-off Worlds, ACM SIGGRAPH Immersive Pavilion, Denver (collaborative exhibition).
2013	Media + Life: Sensorial Collaboration, MAIA International Exhibition, Tokyo (collaborative exhibition).

PROFESSIONAL ARCHITECTURAL EXPERIENCE — SELECTED PROJECTS

2000–2005	**Gluckman Mayner Architects (now Gluckman Tang), New York.** Project Architect / Project Team; selected work:
2000–2003	**Mori Art Museum, Tokyo.** Project Architect, schematic design through opening; designed cable-net-shell entry pavilion and museum exhibition spaces; interdisciplinary coordination with Japanese architects and builders.
2004	**MoMA Store, New York.** Project Architect for retail interior and custom fixtures.
2003	**Hotel Puerta de América, Madrid.** Project Architect for guestrooms and public spaces in a 14-story hotel.
2004	**Museo Picasso Málaga, Spain.** Project team; design and publication development. Project received 2006 AIA Institute Honor Award.

1997–2000	**Skidmore, Owings & Merrill (SOM), New York.** Design team; selected work:
1997–2000	**Kuwait Police Academy, Kuwait.** Contributed to master planning, schematic design, and design development for a 4.5-million-sq-ft campus.
1998	**Time Warner Center (Columbus Center), New York.** Competition design team (winning entry).
2000	**Woolworth Tower Renovation, New York.** Schematic design and landmark submission.

SELECTED INVITED TALKS AND LECTURES

2026	Invited presentation, ASAI Architecture in Perspective 40 Annual Conference, Washington, DC (October).
2026	AI × Human × Architecture: Designing the Future Through Dialogue, Nikken Sekkei, Tokyo (January).
2026	Invited talk/workshop, Forum8 International VR Summer Workshop, Japan (June).
2025	Keynote, The Latest Trends in AI-Augmented Architectural Design in the US, Forum8 Design Festival, Tokyo.
2025	Invited keynote, SURREALITY Exhibition / Forum, HKUST (Guangzhou).
2024	Invited speaker, Forum on Information Technology (FIT), Hiroshima; research featured in IEEE Transactions on Multimedia.
2023	Invited lecture, World16 Symposium, Cambridge Innovation Center Tokyo.
2021	Invited keynote, advanced-technology education program review (architecture and urban development), Japan.
2020	Keynote, data-driven approaches in architecture, Architectural Institute of Japan VR/MR Symposium.
2019	Invited keynote lectures, University of Camerino and University of Naples Federico II, Italy.
2018	Invited lectures, ETH Zurich Institute of Technology in Architecture and University of Tokyo Computer Vision and Media Laboratory.
2017	Invited keynote, Construction Bionics, TU Dresden, Germany.

DOCTORAL RESEARCH AND TEACHING

Current PhD supervision — Dissertation Chair: Muxin Jia (Urban Systems, NJIT; 2021–present) and Kaiheng Zhang (Urban Systems, NJIT; 2023–present). Research includes urban analytics, machine learning, and generative architectural design.

Current PhD dissertation committees (5): Mohammad Saleh (Urban Systems); Bilas Talukdar (Informatics); Biplav Pokhrel, Jeongseo Lee, and Minkyeong Park (Urban Systems), NJIT.

Past dissertation and thesis committees: 6 PhD (Computer Science 4; Informatics 1; Biomedical Engineering 1), NJIT; 1 M.S. thesis (Biomedical Engineering), NJIT; 1 external Diploma dissertation (Architecture), TU Dresden.

Graduate research and courses: USYS 792 Urban Systems Ph.D. Research (recurring; urban analytics and generative architecture); ARCH 689 and ARCH 645 (graduate AI/VR courses in architecture).

Architecture and design studios: ARCH 463/464 Options Studio; ARCH 495/595 Advanced Studio; DD 464 Digital Design Thesis Studio; AD 463 Collaborative Studio. Themes include AI-augmented design, computational methods, sustainability, and speculative urban environments.

Computational design and physical computing: DD 320 Computational Design; DD 364 Digital Design Studio II; AD 490 electives in robotics, smart products, and computational design. Topics include scripting, Arduino, sensors, and interactive prototypes.

Earlier teaching at Harvard GSD and MIT: Harvard GSD — Construction Automation (ABB robotics), Algorithmic Architecture, Digital Design, Processing and RhinoScript workshops; MIT — Geometric Modeling and Advanced Design Studio (teaching assistant).

Teaching-related publications and workshops: SIGGRAPH 2025 Educators Forum (AI-augmented architectural design); EUROGRAPHICS 2014 Best Education Paper/Presentation (sensors and microcontrollers); Forum8 international VR workshop, 2026 (Unitree R1 experimentation).

ACADEMIC AND PROFESSIONAL SERVICE

International / Professional

2026–	Adviser, Kawasaki City, Japan — exhibition media and facility design for Green EXPO 2027 (with Institute of Science Tokyo).
2026	Treasurer, American Society of Architectural Illustrators (ASAI).
2026	Interactive Art Co-Chair, ACM Multimedia 2026.
2025–	Lead Guest Editor, Architecture (MDPI), Special Issue: Computational Design and AI in Architecture: Methods, Evaluation, and Design Integration (with Tomohiro Fukuda).

2025–	Editorial Board Member, International Journal of Architectural Computing (SAGE).
2026	Juror, Architecture in Perspective 40 (AIP40), ASAI.
2025–2026	Unified Jury Member, ACM SIGGRAPH (2025 and 2026); Session Chair (2025).
2024–2025	Proceedings Editor / Session Chair, CAADRIA 2025.
2013–2026	Juror / Executive Committee Member, Cloud Programming World Cup (CPWC).
2019–2020	Co-Guest Editor, Technologies (MDPI), special issue on Computer-Aided Architectural Design.
2013–2014	Organizing Member and Juror, ALGODeQ: Algorithmic Design Quest, Tokyo.

Selected Institutional Service

2022–2025	Faculty Senate, NJIT.
2019–2024	Sabbatical Committee, NJIT; Chair 2022–2024.
2023–present	Faculty Research Advisory Board, NJIT.
2016–present	Promotion and Tenure Committee, HCAD, NJIT.
2024–present	HCAD Research Committee and PhD-related subcommittees.
2011–2025	HCAD Faculty Search Committees; Chair in 2014, 2019, 2021, and 2025.
2012–2017	Founder and Coordinator, GameFest, HCAD.

Selected Peer Review and External Evaluation

Reviewer, IEEE Transactions on Multimedia; Computers & Graphics; Automation in Construction; Journal of Computational Design and Engineering; Construction Robotics; AIEDAM; eCAADe, CAADRIA, ACADIA, ANNSIM, and SIGGRAPH. External promotion/tenure reviewer, Drexel University (2018, 2022).

PROFESSIONAL LICENSES, INTELLECTUAL PROPERTY AND TECHNICAL PRACTICE

Registered Architect, New York State (since 2004); First-Class Architect, Japan (since 2018).

Japan patent application, Narahara and Yamasaki, information processing methods for predicting residential comfort; JP 2020-155588 (filed 2020).

Computational tools: Python, PyTorch, PyTorch Geometric, TensorFlow/Keras, NetworkX, Rhino/Grasshopper, Unreal Engine, Unity, Revit, C#, JavaScript.

Design/AI methods: Computer vision, multimodal LLMs, graph learning, Bayesian networks, generative AI, VR/XR, robotic fabrication.