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March 30, 2024

CURRICULUM VITAE

GENERAL INFORMATION

Education

(2016). *Doctor of Philosophy in Architectural Design and Technology*. Stockholm, Sweden: KTH Royal Institute of Technology. [Dissertation: *Generative design exploration: Computation and material practice*. Stockholm: KTH Royal Institute of Technology. Stockholm: Universitetservice US-AB.]

(2012). *Doctor of Philosophy in Architectural Engineering*. Lulea, Sweden: Lulea University of Technology. (Licentiate of Engineering). [Licentiate Thesis: *Manifested in form: Tensions between utility and form in the digital design of architecture*. Lulea University of Technology (LTU). Lulea: Universitetsstryckeriet.

(2009). *Post-Master in Urban Design of Architecture*. Stockholm, Sweden: Royal Institute of Art.

(2008). *Master of Architecture*. Stockholm, Sweden: KTH Royal Institute of Technology.

(2006). *Bachelor of Applied Science*. Perth, Australia: Curtin University of Technology.

Academic Appointments

(2019-present). *Assistant Professor of Architecture (tenure track)*. Ann Arbor, Michigan: University of Michigan.

(2016-2019). *Postdoctoral Researcher (Assistant Professor)*. Zurich, Switzerland: ETH Zurich, National Centers of Competence in Research (NCCR) Digital Fabrication (DFAB).

(2014-2016). *Project Lead*. Stockholm, Sweden: KTH School of Architecture, "Artifacts in the Making" funded by "Architecture in the Making".

(2013-2016). *Ph.D. Researcher Representative*. Stockholm, Sweden: Swedish Research School in Architecture (ResArc).

(2013-2014). *Visiting Researcher*. Toronto, Ontario: University of Toronto.

(2012-2013). *Visiting Researcher*. Ottawa, Ontario: Carleton University.

(2010-2015). *Digital FABLab Director*. Lulea, Sweden: Lulea University of Technology (LTU).

Professional Experience

(2013-present). *Founder, Senior Designer*. Toronto, Canada: meonia.

(2009-2014). *Founding Partner, Senior Architect*. Stockholm, Sweden: Meonia Handelsbolag.

(2008-2009). *Intern Architect*. Stockholm, Sweden: Artolek KB.

Registration and Professional/ Honorary Societies

(2009-2019). *Registered Architect*. Stockholm: Swedish Association of Architects (Sveriges Arkitekter).

SCHOLARLY WORK

Academic or Professional Papers (Blind Peer Reviewed)

Kamhawi, A., **Aghaei Meibodi, M.** 2024. Techniques and Strategies in Extrusion-Based 3D Concrete Printing of Complex Components to Prevent Premature Failure. *Journal of Automation in Construction*. (submitted, awaiting a response, Manuscript number: AUTCON-D-24-00873.).

Lin, Y., Bayramvand, A., **Aghaei Meibodi, M.** 2024. Towards Lightweight Structure: Coupling Topology Optimization with Non-Planar 3D Concrete Printing. *DigitalFUTURES . The 6th International Conference on Computational Design and Robotic Fabrication*. (submitted, awaiting response).

M Marji, Z., Bindlish, S., Sarimehmetoglu, I., **Aghaei Meibodi, M.** 2024. Cavity Slab: Methods of 3D Printing Integrative Formwork and Sequential Casting for Compression-only Structures. The International Association for Shell and Spatial Structures (IASS 2024). ETH Zurich, Switzerland.. (Accepted for Conference).

M Marji, Z., Bindlish, S., **Aghaei Meibodi, M.** 2024. Compression-only Structure using 3D Printed Formwork System and Sequential Casting. *Digital Concrete 2024*. Munich, Germany. (Accepted for Conference).

Aghaei Meibodi, M., Lin, Y., Chen, H. 2024. Strategies in 3D Concrete Printing for Topology Optimized Structures. *Digital Concrete 2024*. Munich, Germany. (Accepted).

Kamhawi, A., Brown, J., Fahmy, A., **Aghaei Meibodi, M.** 2024. Waste-Free Production of Ultra-Thin Concrete Panels Via Robotic 3D Printing and CNC Dynamic Bed Device. *Digital Concrete 2024*. Munich, Germany. (Accepted for Conference).

Kamhawi A., Varadharajan, Th., Khan, M., **Aghaei Meibodi, M.** (2024). Multi-Robotic 3D Printing Wood-Based Slurry on Construction Scale. *EAAE/ARCC CONFERENCE 2024. Aarhus School of Architecture, Aarhus, Denmark. May 23-26* (Paper Accepted).

Bindlish, S., M Marji, Z., **Aghaei Meibodi, M.** (2023). Cavity Shell: Sequential Cast-in-Place Method to Create Compression-Only Structures with Ultra-Thin Additively Manufactured Formwork Assemblies. *ACADIA 2023: Habits of the Anthropocene: scarcity and Abundance in a Post-Material Economy*. Colorado University, Denver. October 26-28, 2023.

Khan, M., Varadharajan, Th., Keller, Z., **Aghaei Meibodi, M.** (2023). BioMatters: The Robotic 3D-Printed Biodegradable Wood-Based Formwork for Cast-in-place Concrete Structures. *ACADIA 2023: Habits of the Anthropocene: scarcity and Abundance in a Post-Material Economy*. Colorado University, Denver, October 26-28, 2023.

Klemmt, C., **Aghaei Meibodi, M.**, Beaucage, G., & Mcgee, W. (2022). Large-scale Robotic 3D Printing of Plant Fibre and Bioplastic Composites. To be presented in *eCAADe 2022: Co-creating the Future: Inclusion in and through Design*. Ghent: KU Leuven Technology Campus. [Link](#)

Aghaei Meibodi, M., Mcgee, W., & Bayramvand, A. (2022). Robotic 3D Printing Multilayer Building Envelope. To be presented in *ACADIA 2022: Hybrids & Haeccetities*. Philadelphia: University of Pennsylvania. [Link](#)

Zidek, J., Aman, L., Li, X., Alhashemi, J., & **Aghaei Meibodi, M.** (2022). Integrative Green Building Envelope: Large Scale Robotic Additive Manufacturing. To be presented in *ACADIA 2022: Hybrids & Haeccetities*. Philadelphia: University of Pennsylvania. [Link](#)

Aghaei Meibodi, M., Craney, R., & Mcgee, W. (2021). Robotic Pellet Extrusion: 3D Printing and Integral Computational Design - Reinforced Thin Shell System Formwork for Sandwich Concrete Walls. Presented in *ACADIA 2021: Realignments: Toward Critical Computation*. Virtual Event: ACADIA. [Link](#)

Aghaei Meibodi, M., Odaglia, P., & Dillenburger, B. (2021). Min-Max: Reusable 3D Printed Formwork for Thin-shell Concrete Structures. Presented in *CAADRIA 2021: Projections (743-752)*. Virtual Event, organized from Hong Kong: CAADRIA. [Link](#)

Aghaei Meibodi, M., Voltl, C., & Craney, R. (2020). Additive Thermoplastic Formwork for Freeform Concrete Columns. Presented in *ACADIA 2020: Distributed Proximities (516-525)*. Virtual Event: ACADIA. [Link](#)

Aghaei Meibodi, M., Kladeftira, M., Kyttas, T., & Dillenburger, B. (2019). Bespoke Cast Facade, Design and Additive Manufacturing for Aluminum Facade Elements. Presented in *ACADIA 2019: Ubiquity and Autonomy (100-109)*. Austin: The University of Texas at Austin. [Link](#)

Aghaei Meibodi, M., Giesecke, R., & Dillenburger, B. (2019). 3D Printing Sand Molds for Casting Bespoke Metal Connections. Presented in *CAADRIA 2019: Intelligent & Informed (133-142)*. Wellington: Victoria University of Wellington. [Link](#)

Aghaei Meibodi, M., Jipa, A., Giesecke, R., Shammass, D., Bernhard, M., Leschok, M., & Dillenburger, B. (2018). Smart Slab: Computational Design and Digital Fabrication of a Lightweight Concrete Slab.

Presented in *ACADIA 2018: Re/calibration: On Imprecision and Infidelity* (434-443). Mexico City: Universidad Iberoamericana. [Link](#)

Aghaei Meibodi, M., Giesecke, R., & Dillenburger, B. (2018). Digital Metal: Additive Manufacturing for Cast Metal Joints in Architecture. Presented in the *1st International Conference on 3D Construction Printing (3DcP)* (1-9). Melbourne: Swinburne University of Technology. [Link](#)

Jipa, A., **Aghaei Meibodi, M.**, Giesecke, R., Shammass, D., Leschok, M., Bernhard, M., & Dillenburger, B. (2018). 3D-Printed Formwork for Prefabricated Concrete Slabs. Presented at *1st International Conference on 3D Construction Printing (3DcP)* (1-9). Melbourne: Swinburne University of Technology. [Link](#)

Ruffray, N., Bernhard, M., Jipa, **Aghaei Meibodi, M.**, A., de Taisne, N., Stutz, F., & Dillenburger, B. (2017). Complex Architectural Elements From HPFRC and 3D Printed Sandstone. Presented in *AFGC-ACI-fib-RILEM International Symposium on Ultra-High Performance Fibre-Reinforced Concrete, UHPFRC 2017* (135–144). Montpellier: UHPFRC. [Link](#)

Aghaei Meibodi, M., Bernhard, M., Jipa, A., & Dillenburger, B. (2017). The Smart Takes from the Strong: 3D Printing Stay-in-place Formwork for Concrete Slab Construction. Presented in *Fabricate 2017: Rethinking Design and Construction* (210-217). Stuttgart: Institute for Computational Design and Construction at the University of Stuttgart. [Link](#)

Jipa, A., Bernhard, M., **Aghaei Meibodi, M.**, & Dillenburger, B. (2016). 3D-Printed Stay-in-Place Formwork for Topologically Optimized Concrete Slabs. Presented in *TxA Emerging Design + Technology 2016* (97-107). Forth worth: Texas Society of Architects. [Link](#)

Tessmann, O. & **Aghaei Meibodi, M.** (2015). Formwork Performance – On Concrete/Formwork Interaction. Presented in *ISOFF 2015: Future Visions - Symposium on Flexible Formwork* (1-11). Amsterdam: International Association for Shell and Spatial Structures (IASS). [Link](#)

Aghaei Meibodi, M. & Tessmann, O. (2014). Hy[perbolic] Par[aboloid]: Matter and Geometry in a Generative Dialogue. Presented in *ENHSA, EAAE International Conference: What's the Matter: Materiality and Materialism at the Age of Computation* (679-690). Barcelona: COAC, ETSAB, ETSAV. [Link](#)

Aghaei Meibodi, M. & Aghaiemeybodi, H. (2013). Architectural “Making” Modes in Relation to Prototype Notions: The Stripe Pavilion - Progression from a Bespoke to a Parametric-Algorithmic Mode. Presented in *Design Modelling Symposium: Rethinking Prototyping* (503-516). Berlin: University of the Arts Berlin. [Link](#)

Aghaei Meibodi, M. & Aghaiemeybodi, H. (2012). The Synergy Between Structure and Ornament: A Reflection on the Practice of Tectonic in the Digital and Physical Worlds. Presented in *eCAADe 2012: Digital Physicality | Physical Digitality* (245-254). Prague: Czech Technical University in Prague. [Link](#)

Aghaei Meibodi, M. & Aghaiemeybodi, H. (2012). Symbiosis of Structural & Non-structural Properties in Building: Integrating Structural Behaviour in the Generative Computational Process Goes Beyond Instrumentality. Presented in *SIGraDi 2012: FORM(In)FORMATION* (602-606). Fortaleza: The Federal University of Ceará. [Link](#)

Aghaei Meibodi, M. (2012). Technological Advances in Design and Construction: Bridging the Gap between the Conception Stage and the Manufacturing Process. Presented in *Annual International Conference on Construction* (103-118). Athens: Athens Institute for Education and Research (ATINER). [Link](#)

Professional Articles (Non-peer reviewed)

Khan Muhammad, D., Varadharajan, T., Aghaei Meibodi, M. (2024). BioMatters: The Robotic 3D-Printed Biodegradable Wood-Based Formwork to combat wood waste. *Room One Thousand Journal, Issue 12*.

Aghaei Meibodi, M., & Mcgee, W. (2021). Plastic architecture: 3D printing building envelope. *Gradient Journal*.

Aghaei Meibodi, M. (2018). Digital metal: Using 3D printing to cast metal parts in architecture. *TCT Magazine*.

Aghaei Meibodi, M. (2018). Digital Metal: 3D printing sand mold to produce unimaginable and affordable cast metal parts in architecture. *RuMoer 69: Digital Making*, 69, pp.32 - 37.

Academic or Professional Lectures or Presentations

Aghaei Meibodi, M. (March 2024). Intelligent Robotic 3D Printing in Architecture and Construction. *Florida International University (FIU)*. Florida. [Invited speaker].

Aghaei Meibodi, M. (February 2023). 3D Concrete Printing Home. *PERI 3D Construction 2023*, USA Headquarter. Houston: PERI. [Invited speaker].

Aghaei Meibodi, M. (September 2022). Sustainability goals with digital construction. Presented at *AU 2022: Achieving 2030 Sustainability Goals with Better Construction*. New Orleans: Autodesk University. [Invited speaker].

Aghaei Meibodi, M. (2022). Robotic construction. Presented at *The Construction Institute's Visionaries Forum*. Hartford: Construction Institute. [Invited speaker].

Aghaei Meibodi, M. (2022). Disruptive digital design & hybrid robotic construction to material innovations. Presented at *co.de.D (Computational Design Detroit)*. Detroit: AIA Detroit Technology in Architectural Practice. [Invited speaker].

Aghaei Meibodi, M. (2022). Future construction: Robotics & additive manufacturing. Presented at *Teulo Talks*. Virtual Event: Teulo. [Invited speaker].

Aghaei Meibodi, M. (2021). Min-Max: Reusable 3D printed formwork for thin-shell concrete structures. Presented at *CAADRIA 2021 - Projections*. Hong Kong: CAADRIA.

Aghaei Meibodi, M. (2021). Digital fabrication. Presented at *Digital Fabrication Roundtable*. New York: The Cooper Union. [Invited speaker].

Aghaei Meibodi, M. (2021). Digital architecture and research technologies. Presented at *Built Environment Additive Manufacturing Symposium (BE-AM 2021)*. Virtual Event: The Technical University of Darmstadt. [Keynote speaker and moderator].

Aghaei Meibodi, M. (2021). Integral computation and robotic construction. Presented at *The Office Talk*. Detroit: INFORM Studio. [Invited lecture].

Aghaei Meibodi, M. (2021). The future of robotic construction. Presented at *University of Tennessee, College of Architecture and Design*. Virtual Event: University of Tennessee Knoxville. [Invited talk].

Aghaei Meibodi, M. (2021). Robotic additive manufacturing. Presented at *Additive Tectonics Studio, University of Virginia School of Architecture*. Virtual Event: University of Virginia. [Invited lecture].

Aghaei Meibodi, M. (2020). 3D printing furniture. Presented at *MillerKnoll Global Research & Insights Group*. Virtual event: MillerKnoll. [Invited speaker].

Aghaei Meibodi, M. (2020). Additive manufacturing for high-definition concrete structures. Presented at *AU 2020 Theater Talks*. Las Vegas: Autodesk University. [Invited speaker].

Aghaei Meibodi, M. (2020). Additive thermoplastic formwork for freeform concrete columns. Presented at *ACADIA 2020: Distributed Proximities*. Virtual Event: University of Pennsylvania Weitzman School of Design.

Aghaei Meibodi, M. (2020). Rethinking building materials: Generatively designing lightweight precast concrete elements. Presented at *Autodesk, Webinar series: What's Happening in Education?*. Virtual Event: Autodesk Inc. [Invited lecture].

Aghaei Meibodi, M. (2019). Rethinking building elements: Large-scale additive manufacturing. Presented at *AU 2019 Theater Talks*. Las Vegas: Autodesk University. [Invited speaker].

Aghaei Meibodi, M. (2019). Additive manufacturing for lightweight reinforced concrete structures. Presented at *ACI-Quebec & Eastern Ontario 2019: Progress in Concrete*. Montreal: American Concrete Institute. [Invited speaker].

Aghaei Meibodi, M. (2019). Architectural research in the digital age. Panel discussion at *How to Build a House*. New York: Frederick P. Rose Auditorium at The Cooper Union. [Panelist].

Aghaei Meibodi, M. (2019). 3D printing architecture. Presented at *How to Build a House*. New York: Frederick P. Rose Auditorium at The Cooper Union. [Invited speaker].

Aghaei Meibodi, M. (2019). Additive manufacturing for concrete elements. Presented at *From Lab to Site: Innovation in Concrete Symposium*. Ann Arbor: University of Michigan. Symposium presenter].

Aghaei Meibodi, M. (2018). Artificial intelligence: Unseen form with high-resolution details. Presented at *Lucerne School of Engineering and Architecture*. Lucerne: University of Lucerne. [Invited talk].

Aghaei Meibodi, M. (2017). 3D Printing+. Presented at *ULI Toronto Symposium 2017*. Toronto: Urban Land Institute (ULI). [Invited talk].

Aghaei Meibodi, M. (2017). Artificial intelligence and additive manufacturing. Presented at *TSA & DFZ Forum: New Design and Technology Synergies*. Toronto: Toronto Society of Architects (TSA). [Invited talk].

Aghaei Meibodi, M. (2017). Digital metal. Presented at *SUSAS 2017: ThisCONNECTION: Sharing a Future Public Space*. Shanghai: Pudong Minsheng Port. [Invited talk].

Aghaei Meibodi, M. (2017). Out of order: Computing architecture with no historical reference. Presented at the *College of Architecture and Urban Planning*. Shanghai: Tongji University. [Invited talk].

Aghaei Meibodi, M. (2017). 3D Printing +: Additive Manufacturing for Architecture. Presented at *HKU Shanghai Study Center: 2017 Fall Seminar Series*. Shanghai: University of Hong Kong, Faculty of Architecture. [Invited talk].

Aghaei Meibodi, M. (2017). Smart takes from the strong: Composite of 3D printed sandstone and UHPFR concrete. Presented at *Fabricate 2017: Rethinking Design and Construction*. Stuttgart: Institute for Computational Design and Construction at the University of Stuttgart. [Conference presentation].

Aghaei Meibodi, M. (2017). Conversation at Archi-Union. Panel discussion at *Panel discussion with Benjamin Dillenburger and Mania Aghaei Meibodi*. Shanghai: Archi-Union, organized by Philip Yuan. [Panelist].

Aghaei Meibodi, M. (2016). 3D printing technologies for high-resolution architecture and complex parts. Presented at *Arup Office Talk*. Amsterdam: Arup Amsterdam Office. [Invited talk].

Aghaei Meibodi, M. (2016). Hybrid processes: Synergy of 3D printing and CNC milling. Presented at *Arup Office Talk*. Amsterdam: Arup Amsterdam Office. [Invited talk].

Aghaei Meibodi, M. (2016). Architecture that contains not a single straight line. Presented at *Lucerne School of Engineering and Architecture*. Lucerne: University of Lucerne. [Invited talk].

Aghaei Meibodi, M., Kwon, H., Bernhard, M. & Dillenburger, B. (2016). Design and additive manufacturing of functionally graded lightweight structural elements based on multi-material extrusion. Presented at *Advances in Architectural Geometry 2016*. Zurich: ETH Zurich. [Poster presentation].

Aghaei Meibodi, M., Jipa, A., Bernhard, M., Dillenburger, B. (2016). Powder-based 3D printing for building components. Presented at *Advances in Architectural Geometry 2016*. Zurich: ETH Zurich. [Poster presentation].

Aghaei Meibodi, M. (2015). Undrawable architecture: An invitation to curiosity. Presented at *Chalmers University of Technology, School of Architecture*. Gothenburg: Chalmers University of Technology. [Invited talk].

Aghaei Meibodi, M. (2014). “Ought we build it?”. Presented at *Chalmers University of Technology, School of Architecture*. Gothenburg: Chalmers University of Technology. [Invited talk].

Aghaei Meibodi, M. (2013). Architectural design intelligence. Presented at *The CulturePlex Laboratory*. London: Faculty of Arts and Humanities at the University of Western Ontario. [Invited talk].

Aghaei Meibodi, M. (2012). Digital technology for attractive cold climate cities. Presented at *Cold Climate Cities*. Kiruna: Kiruna Municipality. [Invited talk].

Aghaei Meibodi, M. (2011). Architecture as a creative material practice. Presented at *Kulturens Hus Lulea*. Lulea: Kulturens Hus Lulea. [Invited talk].

Academic Design-Built Research Projects

Aghaei Meibodi, M. (project lead). (2024). [Multi-Robot 3D Printing](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2023). [Biomatters: The Robotic 3D-Printed Biodegradable Wood-Based Formwork for Cast-in-place Concrete Structures](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2023). [Cavity Shell: Sequential Cast-in-Place Method to Create Compression-Only Structures with Ultra-Thin Additively Manufactured Formwork Assemblies](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2023). [Mantaray: Coupling Robotic additive manufacturing and CNC adoptable curved formwork to fabricate Doubly Curved Mega Facade Panels](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2023-2024). [Branch Wall: Ultra Lightweight Structural Concrete Wall](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2023). [Shell Wall: Ultra Lightweight Structural Concrete Wall](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2021). [Multilayered and Green Building Envelope](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2021). [Multilayered Building Envelope](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2020-2021). [MinMax: Ultra Lightweight Concrete Envelope](#). Ann Arbor: University of Michigan.

Aghaei Meibodi, M. (project lead). (2016-2019). [Smart Slab Project of DFAB HOUSE](#). Zurich: Swiss National Centre of Competence in Research (NCCR).

Aghaei Meibodi, M. (project lead). (2017-2019). [Digital Metal Project](#). Zurich: ETH Zurich.

Aghaei Meibodi, M. (project lead). (2018). [Digital Metal 2018: Deep Façade](#). Zurich: ETH Zurich.

Aghaei Meibodi, M. (project lead). (2017). [Digital Metal 2017: Liquid Pavilion](#). Zurich: ETH Zurich; Shanghai: Shanghai Urban Space Art Season (SUSAS).

Aghaei Meibodi, M. (project lead). (2016). [3D Printed Slab: Topology Optimization](#). Zurich: ETH Zurich.

Aghaei Meibodi, M. (project lead). (2014). [Hyperbolic Parabolic Showcase](#). Stockholm: KTH School of Architecture.

Aghaei Meibodi, M. (project lead). (2013). [Strobometric](#). Lulea: Lulea University of Technology (LTU).

Aghaei Meibodi, M. (project lead). (2012). [Strip Pavilion](#). Lulea: Lulea University of Technology (LTU).

Aghaei Meibodi, M. (project lead). (2012). [Modular Pavilion](#). Lulea: Kulturens Hus Lulea.

Aghaei Meibodi, M. (project lead). (2011). [Honeycomb Pavilion](#). Lulea: Kulturens Hus Lulea; Lulea University of Technology (LTU).

Exhibited Work

Aghaei Meibodi, M. & DART Laboratory (09/2023)). Robotic 3D Printing in Architecture and Construction. Exhibited in the “Celebrate Invention Highlighting U-M Innovators.” September 14, 2023. [LINK](#).

Aghaei Meibodi, M., & Mcgee, W. (co-curators). (10/2021-11/2021). [Plastic Architecture](#). In S. Hillyer (curator), New York: The Cooper Union. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2023, Feb - 2023, March). [Shell Wall](#). Ann Arbor, Michigan: The Liberty Research Annex Gallery. Mixed Media (Interactive Video, Architectural Presentation Boards, 1:1 Built Prototypes)

Aghaei Meibodi, M. (2022, March - 2022, September). [Medial Surface](#). In K. Velikov (curator), *On Air Faculty Work 2020-2021*. Ann Arbor, Michigan: The Liberty Research Annex Gallery. Mixed Media (Interactive Video, Architectural Presentation Boards, 1:1 Built Prototypes)

Aghaei Meibodi, M. (2022, March - 2022, September). [MinMax: Ultra Lightweight Concrete Envelope](#). In K. Velikov (curator), *On Air Faculty Work 2020-2021*. Ann Arbor, Michigan: The Liberty Research Annex Gallery. Mixed Media (Interactive Video, Architectural Presentation Boards, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2022, March - 2022, September). [3D Printed Multi-layered Plastic Envelope](#). In K. Velikov (curator), *On Air Faculty Work 2020-2021*. Ann Arbor, Michigan: The Liberty Research Annex Gallery. Mixed Media (Interactive Video, Architectural Presentation Boards, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2022, March - 2022, September). [3D Printed Topologically Optimized Plastic Envelope](#). In K. Velikov (curator), *On Air Faculty Work 2020-2021*. Ann Arbor, Michigan: The Liberty Research Annex Gallery. Mixed Media (Interactive Video, Architectural Presentation Boards, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2022, January - 2022, January). GFRC Building Envelope. In MCH Swiss Exhibition Ltd. (organizer), *Swissbau 2022*. Switzerland: Swissbau. 1:1 Scale Prototype.

Aghaei Meibodi, M. (2021, May - 2021, November). The [Smart Slab](#). In Hashim Sarkis (curator) *How Will We Live Together?* Venice: 17th Venice Architecture Biennale. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2019, November). Smart Slab. In the University of Michigan Taubman College of Architecture + Urban Planning and the University of Michigan College of Civil and Environmental Engineering (co-organizers), *From Lab to Site: Innovation in Concrete Symposium*. Ann Arbor, Michigan: Liberty Research Annex gallery. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M. (2019, September - 2019, October). Smart Slab of DFAB House. In Mayer, H. & Schneider, S. (co-curators), *How to Build a House*. New York: The Cooper Union. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M. & Dillenburger, B. (2019, June - 2019, September). Flow Table. In Rinke, M. (curator), *The Bones of Architecture*. Lisbon: Belém Cultural Center. Mixed Media.

Aghaei Meibodi, M. (2019, March - 2019, June). Smart Slab of DFAB House. In Mayer, H. & Schneider, S. (co-curators), *How to Build a House: Architectural Research in the Digital Age*. San Francisco: Swissnex San Francisco. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M., Bernhard, M., & Jipa, A. (2019, March). Smart Slab. In Bärnthaler, C. (curator), *BETON – Material für die Zukunft*. Vorarlberg, Austria: Messe Dornbirn Halle 10. Mixed Media (Video, Architectural Presentation Boards, Physical Models, 1:1 Built Prototypes).

Aghaei Meibodi, M. & Dillenburger, B. (2017, October - 2017, December). Digital Metal. In Xiangning, L., Boeri, S., & Zhenning, F. (curators), *SUSAS 2017: ThisCONNECTION: Sharing a Future Public Space*. Shanghai, China: Pudong Minsheng Port.

Aghaei Meibodi, M. (2016, September). 3D Printed Slabs. In Swiss National Centre of Competence in Research (NCCR) (organizer), *Advanced Architectural Geometry Conference*. Zürich, Switzerland: ETH Zurich.

Publications Written by Others about your Work

Shaw, E. (2024,) [Multi-Robot 3D Printing](#), M-Research Research News From University of Michigan.

Blinder, J. (2023). [Nearly zero-waste solution for construction: Reusable robotic 3D-printed formwork from upcycled sawdust](#). *The University of Michigan News*.

Eberhardt, E. (2023). [DART Lab creates biodegradable concrete casts using sawdust](#). Dezeen.

Jenks, J. (2023). [Shell Wall is a groundbreaking project at Taubman College](#) involving a novel 3D concrete printing method. *The University of Michigan News*.

Fast Company/Co.Design (2023). Shell Wall. March 2023

Murphy, R. Shell Wall *LocalToday, Michigan News*. March 20, 2023.

Patrick Walsh, N. (2023) University of Michigan researchers merge 3D printing with computational design to create 'ultra-lightweight, waste-free concrete'. *Archinect News*. March 21, 2023.

Shell Wall: New method of Robotic 3D Concrete Printing (2023), Dezeen.

Novel Computational design and non-planar Robotic 3D concrete printing (2023), Designboom.

Schoof, J. (2022). HiRes Concrete Slab in the Empa NEST Dübendorf. *Detail*.

Girgin C. Z. (2021). DFAB HOUSE : Geçmişin Dijital Yorumu ile Geleceğe Bakış. *Arrademento Mimarlık, November–December(349)*, 38-43.

Rudolph, K. (2021). Druck das (H)aus. *Frankfurter Allgemeine Quarterly*, (1), 115-120.

Bolliger, R. (2020). Leichtbaudecke "Digital Betoniert". *Haustech, January–February(3)*, 28-31.

Hahn, D. & Rüb, C. (2019). Projekt Bauhaus: Can Design Change Society?. *ARCH+*.

Schoof, J. (2019). Gedruckte Architektur [Printed Architecture]. *Detail*, (1/2), 84-91.

Dillenburger, B. (2019). 3D Printed Formwork for Optimized Concrete Slab. *Concrete Plant International*, February 2019, 146-151.

Jipa, A. (2018). Marca K. *Igloo, October – November 2018 (186)*, 62,64.

Stevens, P. (2018). This digitally fabricated 'smart slab' is half the weight of a conventional concrete ceiling. *Designboom*.

Aouf, R. S. (2018). ETH Zurich makes lightweight concrete ceilings using 3D sand-printing. *Dezeen*.

Watkin, H. (2018). ETH Zurich Uses 3D Sand Printed Formwork to Build Concrete Smart Slab. *All 3DP*.

Thomas. (2018). ETH Zurich uses sand 3D printing to build 80 m2 concrete Smart Slab for DFAB House. *3Ders.org*.

Boschung, P. (2018). Smart Slab: Kombination aus Beton und 3D-Druck. *Baublatt*.

Pestalozzi, M. (2018). The Smart Slab has landed. *World Architects*.

Stevenson, K. (2018). Design Of The Week: Smart Slab. *Fabbaloo*.

Michelle. (2018). "Smart Slab": 80 m2 große Beton-Decke für DFAB House. *3DRUCK*.

Zieler, J. (2018). ETH Zürich fertigt mit „Smart Slab“ eine smarte Hausdecke mit einem Sand-3D-Drucker. *3D Grenzenlos Magazin*.

Herold, I. (2018). Wie gerechnet, so ausgedruckt. *die Baustellen, July – August*, 51-52.

Herold, I. (2018). Wo struktur und ornamentik verschmelzen. *der Bauingenieur*, 60-64.

Herold, I. (2018). Wo Struktur und Ornamentik verschmelzen. *opusC*, (4), 4-6.

Honors and Awards for Research, Practice, or Scholarship

Aghaei Meibodi, M. & DART Laboratory (2023). Robotic 3D Printing in Architecture and Construction. *Selected, recognized, and exhibited in the "Celebrate Invention Highlighting U-M Innovators."* September 14, 2023. [LINK](#).

Aghaei Meibodi, M. (2022). Leaders and Visionaries for the Construction Institute's 2022 Visionaries Forum. Hartford: The Construction Institute.

Dillenburger, B., **Aghaei Meibodi, M.** ., Jipa, A., Bernhard, M., Medina, J., Shammas, D., Giesecke, R., Leschok, M., & Mezari, M. (2021). Planning and construction of "Smart Slab" and the DFAB HOUSE. *Architekturpreis Beton (Architectural Award Concrete), Beton Suisse 21 Awards*. Zurich, Switzerland: Beton Suisse.

Filed U.S. Non-Provisional Patent and Provisional Patent Applications

Aghaei Meibodi, M., Lin, Y., Bayramvand, A.. *Three-Dimensional Concrete Printing (3DCP) of Topology Optimized Parts: Geometrically Informed Toolpath and Variable Material Deposition*, UM Invention No. 2023-379-01; US Patent Application No: 2115-008349-US-PS1, Filed March 24, 2024.

Aghaei Meibodi, M. *Multi-Nozzle Automated Additive Spraying and Methods of Additive Spraying to Form Fiber-Reinforced Concrete*, UM Invention No. 2022-425; PCT Patent Application No: PCT/US2023/080733, Filed November 21, 2023.

Aghaei Meibodi, M. *Multi-Nozzle Automated Additive Spraying and Methods of Additive Spraying to Form Carbon Dioxide-Infused Fiber Reinforced Concrete*, UM Invention No. 2022-428; PCT Patent Application No: PCT/US2023/080743, Filed November 21, 2023.

Aghaei Meibodi, M. Marji, Z., Bindlish, S. *Sequential Cast-in-Place method to Create Compression Only Structures with Additive Manufactured Formwork Assemblies*. UM Invention No. 2023-425-02. US Patent Application No. (663/538,321). 2023/09/14.

Aghaei Meibodi, M., Kamravafar, R., Brown, J., Kamhawi, A., and Fahmy, A. *Dynamic Printing Bed For Automated Additive Manufacturing For Forming Freeform Panels*. UM Invention No. 2024-082-01. US Patent Application No. (63/538,410). 2023/09/14.

Aghaei Meibodi, M., Zidek, J., Aman, L., Elhashei, J., Li, X. *Additively Manufactured Structures For Supporting Plant Growth In Bio-Diverse Green Construction*. UM Invention No. 2023-382-01. US Patent Application No. (63/538,194). 2023/09/13.

Aghaei Meibodi, M. Marji, Z., Bindlish, S. *Sequential Cast-in-Place method to Create Compression only Structures with Additive Manufactured Formwork Assemblies*. UM Invention No. 2023-425. US Patent Application No. (63/461,159). 2023/04/21.

Aghaei Meibodi, M. *Multi-Nozzle Automated Additive Spraying and Methods Of Additive Spraying To Form Fiber-Reinforced Concrete*. UM Invention No. 2022-425; U.S. Patent No. (63/426,887). 2022/11/21. (Patent Pending).

Aghaei Meibodi, M. *Multi-Nozzle Robotic Additive Spraying of Fiber-Reinforced CO₂-Infused Concrete for Innovation and Deployment of Carbon-Neutral and Carbon-Capture Manufacturing Technology in Building Construction*. UM Invention No. 2022-428; US Patent Application No. (63/426,895). 2022/11/21. (Patent Pending).

Organized Workshops and Symposiums

Aghaei Meibodi, M. (Umich), Bogosian, B. (ASU), Corrigan, S. (UCI). Future of Manufacturing Workshop. Hosted by Vassigh, Sh. (FIU), Pacheco, L. (FIU), Gannon, M. (FIU). RDF Lab, Florida International University. Feb 29, 2024- March 2, 2024. [LINK](#).

Aghaei Meibodi, M. (DART laboratory Taubman College), Boon, G. (Sika), Nekkanti, H. (Sika), Corvez, D. (XtreeE), Mallet, A. (XtreeE), Duballet, R. (XtreeE), Seyedahmadian, A., Lo, E. Kamhawi, A. (DART laboratory Taubman College). *Advancing Low Carbon Additive Manufacturing*. In ACADIA Workshop, October 23–25, 2023, at Sika’s NJ headquarters and online. [LINK](#)

Aghaei Meibodi, M. (organizer) & Mitropoulou, I. (guest). (2023). *Nonplanar Layered Morphologies*. Taubman College of Architecture and Urban Planning.

Aghaei Meibodi, M. (2023). *Exhibition of Robotic Workshop: “How to Draw.”* Taubman College of Architecture and Urban Planning.

Aghaei Meibodi, M. (2020-2021). Additive Futures Symposium: ***Conversations on the Future of Additive Manufacturing in Architecture***. Ann Arbor: Taubman College. (organizer, moderator)

Granted Funding and Awards

Aghaei Meibodi, M. (PI), Barton, K. (Co I). (2024/03/19). Intelligent Robotic 3D Concrete Printing for Lightweight Slab. *Pressing Matter, University of Michigan*. \$20,000.

Aghaei Meibodi, M. (PI), Barton, K. (CoPI). (2024/01/15). Center of Smart Robotic Additive Construction. *OVPR: Bold Challenges' Accelerate program, University of Michigan*. \$85,000.

Aghaei Meibodi, M. (PI), Barton, K. (CoPI). Generative AI for Materials and 3D Printing (3DP) Co-Design: Towards a Center for Additive Manufacturing and Material Advancements in Construction (CAMMAC). *MMRI Program, Michigan Materials Research Institute*. \$60,000.

Aghaei Meibodi, M. (PI). (2023/03). Revolutionizing Concrete Slabs: Combining Robotic 3D Printing and Topology Optimization Techniques for Efficient Lightweight Designs. *UM, Research Catalyst and Innovation (RCI) Award for Small Scale and Preliminary Projects* (\$20,000 (15,000 RCI + 5000 Seed)).

Ahlquist, S. (PI) & **Aghaei Meibodi, M. (Co-PI)**. (2022/08 - 2023/12). Collective tinkering: Building infrastructures for inclusive space-making through engagement, workshops, and events combining art and architecture, U-M students, local educators, and diverse learners. *The Arts Initiative of the University of Michigan* (\$13,400).

Pannier, C., & Mohanty, P., **Aghaei Meibodi, M. (Co-PI)**. (2022/06). Developing a large-scale 3D metal printing based on water-binding and sinter-welding. *UM Graham Sustainability Institute, Carbon Neutrality Acceleration Program* (Advanced to the Second Round).

Aghaei Meibodi, M. (PI), Mcgee, W., Menassa, C., Okwudire, C., & Kamat, V. (2022/04 - 2022/09). Future construction: Human-in-the-loop cyber-physical systems (CPS) in construction. *Research Accelerator Program: Bold challenges. University of Michigan* (\$100,000: \$25,000 (Team formation)+ 25,000 (Incubation) + 75,000 (Nurture)). OVPR.

Aghaei Meibodi, M. (PI). (2022). Robotic 3D printing of carbon fiber reinforced plastic. *UM, Research Catalyst and Innovation (RCI) Award for Small Scale and Preliminary Projects* (\$17,000).

Aghaei Meibodi, M. (PI) & Zhu, H. (2021). Robotic additive spraying (RAS) reinforced concrete structures: Carbon neutrality for future manufacturing in civil infrastructure design and construction. *Pressing Matters, UM Taubman College of Architecture and Urban Planning, The Alan and Cynthia Berkshire Fund for Prototyping Tomorrow* (\$20,000).

Aghaei Meibodi, M. (PI). *UM Provost's Early Tenure-Track Faculty Research Support Initiative* (\$3,000). OVPR.

Aghaei Meibodi, M. (PI) & McGee, W. (2021). Robotic 3D printing thermoplastic building envelope. *UM Exhibition Production, Research, and Creative Practice* (\$9,450).

NG. T., **Aghaei Meibodi, M. (Co-PI)**, Newell, C., Mcgee, W., Ahlquist, S., Wilcox, G., Rule, J., Griffiths, C., Del Campo, M., Sanchez, J., Adel, A., Von Buelow, P., Meier, M., & Velikov, K. (2021). *Get It Together*, *UM Taubman College of Architecture and Urban Planning* (\$5,000).

Aghaei Meibodi, M. (PI), Li, V., & McGee, W. (2020). Additive Formwork for Lightweight Concrete. *University of Michigan Office of Research Faculty Grants and Award Program* (\$15,000).

Aghaei Meibodi, M. (PI). (2020). 3D graphic room (3DGR): Real-time 3D graphic platform. *UM Taubman College Spatializing Digital Pedagogies RFP* (\$5,000).

Aghaei Meibodi, M. (PI). (2020). Rethinking concrete slabs: Additive formwork and material optimization to fabricate lightweight and functionally integrated concrete slab. *Johnson & Johnson Women in STEM2D Scholars Program, Design Category* (Institutional nominee).

Aghaei Meibodi, M. (Project lead) (2018). 3D printing dissolvable formwork. *PERI Group Industrial-Research Funding* (\$ confidential).

Aghaei Meibodi, M. (Project lead) (2018). Two fully funded Ph.D. positions at Digital Building Technologies, ETH Zurich. *National Centre of Competence in Research (NCCR) Digital Fabrication* (\$ confidential).

Aghaei Meibodi, M. (Project lead) (2018). Deep Façade Project. *DGS Druckguss-Systeme AG* (\$17,000).

Aghaei Meibodi, M. (Project lead) (2018). Cast Metal Chair. *DGS Druckguss-Systeme AG* (\$7,000).

Aghaei Meibodi, M. (Project lead) (2017). Liquid Pavilion. *Shanghai Urban Space Art Season (SUSAS)* (\$50,000).

Aghaei Meibodi, M. (Project lead) (2017). Smart Slab Project Segmental Prototype. *National Centre of Competence in Research (NCCR) Digital Fabrication* (\$20,000).

Aghaei Meibodi, M. (Project lead) (2017). Liquid Pavilion and Digital Metal Research. *DGS Druckguss-Systeme AG, Aluminium-Laufen AG Liesberg & Aluminium-Verband Schweiz* (\$50,000).

Aghaei Meibodi, M. (Project lead) (2017). Designing a building a demonstrator for NCCR Site Visit. *National Centre of Competence in Research (NCCR) Digital Fabrication* (\$16,000).

Aghaei Meibodi, M. (Project lead) (2017). Construction, Supervision, and Post-Tensioning of Smart Slab Project. *Frutiger AG and Stahlton AG*. (\$ confidential).

Aghaei Meibodi, M. (Project lead) (2016). Smart Slab Project Segmental Prototype. *National Centre of Competence in Research (NCCR) Digital Fabrication* (\$6,000).

Aghaei Meibodi, M. (2015). Generative design exploration. *Lars Erik Lunbergs Scholarship Foundation* (\$23,000).

Aghaei Meibodi, M. (2014). Artifact in the Making. “Architecture in the Making” Research Environment (\$35,000).

Aghaei Meibodi, M. (2014). Generative design exploration. *Lars Erik Lunbergs Scholarship Foundation* (\$23,000).

Aghaei Meibodi, M. (2013). Generative design exploration. *Lars Erik Lunbergs Scholarship Foundation* (\$23,000).

Aghaei Meibodi, M. (2012). Prototyping material for Honeycomb Pavilion. *Samhällsbyggnadsinstitutionen at Lulea University of Technology (LTU)* (\$10,000).

Aghaei Meibodi, M. (2012). Building material for Robotic Timber Pavilion. *Norbottens byggmästareförening, XL Bygg Stenvalls, Jord Proffset AB, Sundsvalls Profildekor AB, Biltema, Laitis* (\$19,000).

Aghaei Meibodi, M. (2012). Generative design exploration. *Lars Erik Lunbergs Scholarship Foundation* (\$16,000).

Under Revision: Submitted and Returned Grant Applications, Declined

Aghaei Meibodi, M. NSF CAREER: Robotic Non-Planar 3D Concrete Printing for Optimized Structures and Waste-Free Construction. National Science Foundation (NSF): Advance Manufacturing (CAREER). Proposal Number: 2339083. (Submitted to NSF on 12/04/2023, Asking \$652,407, Declined)

Barton, K. (PI), **Aghaei Meibodi, M. (CoPI)**, Mower, E. (CoPI), Jin, J. (CoPI). FMSG: Cyber: Smart Additive Manufacturing of Buildings: A Data-Driven Framework for Human-Centric Cyber-Physical Systems for Robotic 3D Printing Construction. *National Science Foundation (NSF) Future Manufacturing (FM) Program*. Proposal Number: 2328094 (Submitted to NSF on 09/29/2023, asking \$499,927, Declined).

Aghaei Meibodi, M. (PI), Sanders, N. (Co-PI), Currie, W.(Co-PI), Zidek, J. (GSRA). BioScape: 3D-Printed Biodiverse Urban Garden. *The Arts Research: Incubation & Acceleration (ARIA), University of Michigan*. (Submitted to ARIA on December 11, 2023, asking \$ 50,000, Declined).

Aghaei Meibodi, M. (PI). Affordable Materially Agnostic 3D Printing Technology: Towards a Low Carbon Additive Manufacturing in Construction. *Elizabeth Caroline Crosby Faculty Grant*. (Submitted to ARIA on October 30, 2023, asking \$ 20,000, Declined).

Aghaei Meibodi, M. (PI), Zidek, J. (Co-PI). BioWall: Revolutionizing Multifamily Housing with 3DP Integrative Green Wall Systems. *SOM Foundation*. (Submitted to SOM on Nov 21, 2023, asking \$ 20,000, Declined).

Aghaei Meibodi, M. (PI), Bindlish, S. (Co-I), Marji, Z. Cavity Floor Slab: Additively Manufactured Formwork Assemblies and Sequential Cast-in-Place Methods to Create Compression-Based Slabs . *2023 Upjohn Research Initiative*. (Submitted to *Upjohn Research Initiative* on Nov 21, 2023, asking \$ 30,000 Declined).

Aghaei Meibodi, M. (PI), Zidek, J. (Co-I) . Robotic 3D Printing Green Building Envelopes with Hempcrete . *2023 Upjohn Research Initiative*. (Submitted to *Upjohn Research Initiative* on Nov 21, 2023, asking \$ 30,000 Declined).

Aghaei Meibodi, M. (PI), Volker, S., Zhu, H.. MN-RAS: Multi-Nozzle Robotic Additive Spraying of Fiber-Reinforced CO₂-Infused Structural Concrete: Accelerating deployment of Carbon-neutral and Carbon-capture manufacturing technology in the Building industry and Construction. *Carbon Neutrality Acceleration Program, OVPR, University of Michigan*. (Submitted to *Upjohn Research Initiative* on April 1, 2023, asking \$ 200,000 Declined).

Aghaei Meibodi, M. (PI), Zhu, H. (Co-PI), & Mcgee, W. (Co-PI). (Completed / editing stage). Dual Nozzle Additive Spraying of Slurry Concrete and Fiber. *National Science Foundation (NSF) Advanced Manufacturing (AM) Program*. (In progress, the submission date to NSF is 01/06/2024. We are asking for \$700,000.)

Carol C. Menassa (PI), **Aghaei Meibodi, M. (Co-PI)**, (Vineet R. Kamat, Min Deng. (2022/12). Understanding Impediments to Carbon Neutral Buildings Through Human-Centric Energy Consumption Models of Post-Pandemic Flexible Spatio-Temporal Workspaces. *UM, Graham Sustainability Institute, Carbon Neutrality Acceleration Program* (Submitted).

Klemmt, C., **Aghaei Meibodi, M. (Co-PI)**, Mcgee, W., & Beaucage, G.(2021/11). Large-scale, low-viscosity additive manufacturing with wood composites. *National Science Foundation (NSF) Advanced Manufacturing (AM) Program*. Proposal Number: 2112982. (Submitted to NSF on 02/04/2021, Withdrawn for Revision asking 1,493,156).

Commissioned Architecture Work

Aghaei Meibodi, M. (lead architect) and Aghaiemeybodi, H. (2018). *415 Dundas Commercial Residential*. Toronto: Freelance work.

Aghaei Meibodi, M. (lead architect) and Aghaiemeybodi, H. (2018). *17 Standly Residential House*. Toronto: Freelance work.

Aghaei Meibodi, M. (lead architect) and Aghaiemeybodi, H. (2017). *18 Burlington Residential House*. Toronto: Freelance work.

Aghaei Meibodi, M. (lead architect, digital fabrication lead), Aghaiemeybodi, H., Kretzer, M. and Sachs, H. (2016). *Manta at Facebook*. Toronto: Facebook Canada Headquarter.

Aghaei Meibodi, M. (lead architect) and Aghaiemeybodi, H. (2014). *120 Hope Residential House*. Toronto: Freelance work.

Aghaei Meibodi, M. (lead architect) and Aghaiemeybodi, H. (2012). *Svartensgatan Unit*. Toronto: Freelance work.

Aghaei Meibodi, M. (lead architect), Aghaiemeybodi, H. and Ceder, M. (2010). *Kungsholmen Residential Unit*. Stockholm: Freelance work.

Aghaei Meibodi, M. (lead architect) and Ceder, M. (2009). *Tunelgatan Residential Unit*. Stockholm: Freelance work.

TEACHING

Courses Taught

A. Alfred Taubman College of Architecture and Urban Planning at the University of Michigan, Ann Arbor.

(2024, Winter) ARCH 825: Advanced Computational Geometry.

(2024, Winter) ARCH 709: Advanced Computational Geometry.

(2024, Winter) ARCH 707: Material Engagement.

(2023, Winter) Arch 839 Research Practicum. Student: Sensing, Data Collection, and Modeling for 3D Concrete Printing. Yuxin Lin.

(2023, winter) ARCH 810: Independent Study. Developing a Framework for Multi Robotic 3D Concrete Printing. Student Abdallah Kamhawi.

(2023, Fall) ARCH 810: Independent Study. Methods for literature reviews and research methodology. Students: Abdallah Kamhawi, Juliette Zeidik, Yuxin Lin, Christopher Voltl.

(2023, Fall) ARCH 600: Independent Study: Computational Design through 3D Graphic Static. Stuti Bindlish

(2023, Fall) ARCH 600: Independent Study: Robotic 3DP of Formwork. Zaid Maji.

(2023, Fall) ARCH 600: Independent Study: Freeform Panels Wall Installation. Student Jake Brown.

(2023, Fall) ARCH 600: Independent Study: 3D Printing of Ceramic Facade. Student Ali Fahmy.

(2023, Fall) ARCH 509: Computational Design (ca. 15 students).

(2023, Fall) ARCH 509: Computational Design (ca.12 students).

(2023, Winter) ARCH 793: DMT MS Capstone.

(2023, Winter) ARCH 600: Independent Study: Tutorial Std Arch (HangPrinter). Mohammad Karkoutly.

(2023, Winter) ARCH 600: Independent Study: Tutorial Std Arch (HangPrinter). Jake Brown.

(2023, Winter) ARCH 600: Independent Study: Tutorial Std Arch (HangPrinter). Zach Harris.

(2023, Winter) ARCH 990: Independent Study: Dissertation Pre-candidacy

(2022, Fall) ARCH 708: Systems Engagement.

(2022, Fall) ARCH 709: Advanced Computational Geometry.

(2022, Fall) ARCH 825: Doctoral Area Seminar - BT (Advanced Computational Design).

(2022, Fall) ARCH 990: Independent Study: Dissertation Candidacy

(2022, Winter) ARCH 709: Advanced Computational Geometry.

(2022, Winter) ARCH 825: Doctoral Area Seminar - BT (Advanced Computational Design).

(2023, Winter) ARCH 839: Research Practicum

(2022, Fall) ARCH 709: Advanced Computational Geometry.

(2022, Fall) ARCH 825: Doctoral Area Seminar - BT (Advanced Computational Design).

(2021, Fall) ARCH 509: Computational Geometry.

(2021, Fall) ARCH 707: Material Engagement.

(2021, Winter) ARCH 571: Advanced Digital Fabrication.

(2021, Winter) ARCH 810: Doctoral Area Seminar - Building Technology

(2021, Winter) ARCH 825: Doctoral Area Seminar - Building Technology

(2021, Winter) ARCH 707: Material Engagement.

(2020, Fall) ARCH 537/001: Fabrication.

(2020, Fall) ARCH 537/301: Fabrication.

(2020, Winter) ARCH 571: Advanced Digital Fabrication.

(2019, Fall) ARCH 707: Material Engagement.

Master of Advanced Studies ETH in Architecture and Digital Fabrication (MAS ETH DFAB), National Centre of Competence in Research (NCCR) Digital Fabrication at the ETH Zurich, Zurich.

(2018, Winter) *MAS ETH DFAB: Thesis.*

(2018, Winter) *MAS ETH DFAB: Digital Metal: Deep Facade.*

(2017, Winter) *MAS ETH DFAB: Thesis.*

(2017, Winter) *MAS ETH DFAB: Digital Metal: Shaping Liquid.*

(2017, Winter) *Doctoral Area Seminar: Designedly Modes of Research.*

KTH School of Architecture and The Built Environment, Stockholm, Sweden.

(2014, Fall-2016, Fall) *Impregnate Material: Making Discipline and Material Practice in Architecture.*

(2015, Fall-2016, Fall) *Digital Design and Making Graduate Studio.*

Lulea Technical University (LTU), Lulea, Sweden.

(2010, Fall-2015, Winter) *GU 345: Digital Design and Making Graduate Studio.*

(2010, Fall-2015, Winter) *Graduate Thesis.*

SERVICES

Service Organizations

Review for National Science Foundation's Project

(2023) panel member and external evaluator, NSF [PrinTimber \(LINK\)](#), University of Idaho, NSF - EPSCoR RII Track-2 program (4-year, \$6M project).

Academic/Professional Organizations

(2022). *Scientific Committee* (member). Construction Robotics (Journal).

(2022). *Scientific Committee* (member). International Webinar on Civil Engineering and Architectural Design (CEAD Webinar).

(2022). *Scientific Committee* (peer review committee). ACADIA Conference.

(2021). *Scientific Committee* (member). SimAUD.

(2021). *Scientific Committee* (peer review committee). ACADIA Conference.

(2021). *Scientific Committee* (peer review committee). eCAADe Conference

(2017). *Scientific Committee* (peer review committee). ACADIA Conference.

(2018). *Scientific Committee* (peer review committee). ACADIA Conference.

(2019). *Scientific Committee* (peer review committee). ACADIA Conference.

(2020). *Scientific Committee* (peer review committee). ACADIA Conference.

(2014). *Scientific Committee* (peer review committee). ACSA Toronto.

(2008). *Search Committee* (peer review search committee for a professor of sustainable construction). The University of Antwerp.

Dissertation/ Thesis/ Review Committees

(2022-present). Ph.D. Dissertation Committee (main advisor). University of Michigan. Yuxin Lin.

(2020-present). Ph.D. Dissertation Committee (main advisor). University of Michigan. Christopher Voltz.

(2017-present). Ph.D. Dissertation Committee (co-advisor). ETH Zurich. Hyunchul Kwon.

Juries

(2021). *Final Review: COBOTIC MATTERS*. Anhalt University of Applied Sciences: Dessau Department of Design and Dessau Institute of Architecture.

(2020). *UG Thesis Final Review: Advanced Technologies and Material Practices*. University of Virginia: School of Architecture.

(2018). *Final Review: Architectural Design Studio 5*. University of Toronto: Daniels School of Architecture.

(2018). *Final Review: MAS Thesis - Neuronal Stool*. ETH Zurich: Master of Advanced Studies ETH in Architecture and Digital Fabrication, Department of Architecture.

(2018). *Final Review: MAS Thesis - FEA Simulation of Glass Cast*. ETH Zurich: ETH Zurich: Master of Advanced Studies ETH in Architecture and Digital Fabrication, Department of Architecture.

(2018). *Final Review: MAS Semester 2*. ETH Zurich: ETH Zurich: Master of Advanced Studies ETH in Architecture and Digital Fabrication, Department of Architecture.

(2017). *Final Review: MAS Studio - Digital Metal*. ETH Zurich: ETH Zurich: Master of Advanced Studies ETH in Architecture and Digital Fabrication, Department of Architecture.

(2017). *Final Review: MAS T2*. ETH Zurich: ETH Zurich: Master of Advanced Studies ETH in Architecture and Digital Fabrication, Department of Architecture.

(2016). *Final Review: Digital Fabrication Elective: Composite Assemblies - Physical and Digital Process Artifacts in Architectural Design*. KTH University.

Competition Juror

(2020). *LOOP Design Awards*.

(2016). *Panel Review: SukkahVille International Design Competition*. Toronto: Sukkahville 2016 Design Competition and Exhibition.

Committees

Program

(2020-present). *Arch Ph.D. Advisory Committee*. Ann Arbor: Taubman College.

(2020-present). *Doctoral Admissions*. Ann Arbor: Taubman College.

(2021-2023). *Architecture Ph.D. Finance*. Ann Arbor: Taubman College.

(2020). *MS_DMT Admissions*. Ann Arbor: Taubman College.

(2019). *MS_DMT Admissions*. Ann Arbor: Taubman College.

College

(2020-present). *Research Policy Committee (member)*. Ann Arbor: Taubman College.

(2020-present). Digital Architecture Technologies (DART) (director). Ann Arbor: Taubman College.

(2020). Urban Technology Faculty Working Group “New Urban Technology Degree Program.” Ann Arbor: Taubman College.

(2016-2019). Master of Advanced Studies ETH in Architecture and Digital Fabrication (lead instructor). Zurich: ETH, Zurich.

(2016-2019). Digital Building Technology Group (supervisor). Zurich: ETH, Zurich.

Other Activities

2023/03 WEMU 89.1 FM podcast interview Mania Aghaei Meibodi and Cathy Shafran (Host/All Things Considered), Robotic 3D Printing Concrete.

2023/09 Voice of America interview Mania Aghaei Meibodi and Andrey Derkach, 3D Sawdust Printing. [Link](#)

2023/05 Review Computational Design MS Thesis Reviews, Carnegie Mellon University. Organized by Daniel Cardoso Llach. May 4, 2024.

BIOGRAPHY

I am an assistant professor at Taubman College of Architecture and Urban Planning at the University of Michigan (UMICH), where I direct the DART laboratory focused on Robotic 3D Printing in Architecture and Construction. Before joining UMICH, I was a senior researcher at ETH Zurich, leading groundbreaking large-scale 3D printing initiatives within the Digital Building Technologies group. I have over 13 years of expertise in Computational Design and Robotic Construction Methods in Architecture, and an active professional practice complements my academic background spanning both engineering and architecture. I am expanding my research and teaching efforts to focus on Smart Robotic 3D printing in Architecture and Construction. This involves leveraging sensing, data collection, and modeling to develop frameworks and models for intelligent decision-making in robotic 3D printing.