

ALEXANDROS HARIDIS

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EDUCATION

- 2022 Ph.D. in Architecture: Design and Computation, Department of Architecture
Massachusetts Institute of Technology. Presidential Fellow.
- 2017 M.S. in Computer Science, Department of Electrical Engineering & Computer Science
Massachusetts Institute of Technology.
- 2017 SMArchS in Design and Computation, Department of Architecture
Massachusetts Institute of Technology.
- 2014 Diploma of Architect Engineer, School of Architecture
Aristotle University of Thessaloniki.

ACADEMIC EMPLOYMENT

Faculty Positions

- 2023-Present Harvard University, Cambridge, MA, USA
Lecturer on Design & Engineering (full-time), John A. Paulson School of Engineering &
Applied Sciences with joint affiliation with the Graduate School of Design

Teaching & Research

- 2017-2022 Massachusetts Institute of Technology, Cambridge, MA, USA
PhD Researcher, MIT Department of Architecture, Computation Group
Advisor: George Stiny, Professor of Design and Computation
- 2014-2021 Massachusetts Institute of Technology, Cambridge, MA, USA
Graduate Teaching Assistant, MIT Department of Architecture and MIT Department of
Electrical Engineering & Computer Science
- 2016-2018 Massachusetts Institute of Technology, Cambridge, MA, USA
Research Assistant, Genesis Group, Computer Science & Artificial Intelligence Lab (CSAIL)
Mentor: Patrick H. Winston, Ford Professor of Artificial Intelligence and Computer Science
- 05—12/2015 Massachusetts Institute of Technology, Cambridge, MA, USA
Research Assistant, Digital Structures Group, Department of Architecture
Mentor: Caitlin Mueller, Associate Professor of Architecture and Civil Engineering

PUBLICATIONS

Peer-Reviewed Journal Articles

Published

- 2022 "SHREC'21: Quantifying shape complexity," M. Arslan*, A. Haridis*, P. L. Rosin, S. Tari, et al. *Computers & Graphics* 102: 144—153.
- 2022 "Analysis of shape grammars: continuity of rules," A. Haridis and G. Stiny *Environment and Planning B: Urban Analytics and City Science* 49: 1929—1948.
- 2020 "Structure from appearance: topology with shapes, without points," *Journal of Mathematics and the Arts* 14: 199—238.
- 2019 "The topology of shapes made with points," *Environment and Planning B: Urban Analytics and City Science* 47: 1279—1288.

Under Review

- 2024 "Discernible identicals: from rule-based aesthetic systems to machine learning in architecture and design." Under review: *Design Studies*.
- 2024 "Formulations of the generative in design, science and technology." Under review: *Technology | Architecture + Design* (Special Issue: Generative).

Book Chapters

- 2023 "Arrangements containing shapes: mathematical features and their use in visual calculating." In SD Kotsopoulos (Ed.) *Shape Computation: Fifty Years 1972-2022* (Springer Nature). Also in *Mathematics and the Built Environment* book series.

Peer-Reviewed Conference Papers and Abstracts

Published

- 2024 "Formulating the generative: history, logic and status of computing designs in a latent space," In: *Proc. of 42nd Conf. Edu. & Res. in Comp. Aided Arch. Design in Europe*. Nicosia, Cyprus.
- 2019 "Notes for an improvisational specification of design spaces," In: *Proc. of the Eighteenth International Conference on Design Computing and Cognition* (DDC'18), Politecnico di Milano, Lecco, Italy.
- 2018 "Deep3D Research for Indoor Scene Reconstruction," R. Villalon and A. Haridis. In: Posters of the *New England Symposium on Graphics*, MIT CSAIL, April 14, 2019. Cambridge, MA.
- 2018 "Some issues concerning the use of design space formalisms in creative domains," In: *Proc. 5th International Conf. on Design Creativity* (ICDC'18), University of Bath, Bath, UK.
- 2016 "Talking about architectural compositions: pilot study on description styles and envisioning," A. Haridis and P. H. Winston. In: Posters of the *Sixteenth International Conference on Design Computing and Cognition* (DCC'16), July 26, 2016, Northwestern University, Chicago, IL, USA

Under Review/In Preparation

- 2025 "Description changes in architecture: identity rules in shape grammars and multiplicity in design datasets," N. Moustroufis and A. Haridis In: *Nexus 2025: Relationships Between Architecture and Mathematics*, June 3–6, Vicenza, Italy.

Textbook Project

- 2018-2022 *Introduction to Artificial Intelligence at MIT: 6.034 Teaching Notes*. MIT Department of Electrical Engineering and Computer Science (internal use).

Invited Talks and Presentations

- 2025 metaLAB (at) Harvard, Berkman Klein Center, Harvard University. Cambridge, MA, USA. January, Upcoming.
- 2024 National Technical University of Athens, School of Architecture. Special Topics in the History and Theory of Architecture (8th sem.): Artificial Intelligence and Architectural Work. Athens, Greece. *Online*.
- 2024 New York Institute of Technology, School of Architecture & Design. "The Generative in Design, Science and Technology." New York City, NY.
- 2023 John A. Paulson School of Engineering & Applied Sciences, Harvard University, Lecture. "Calculating the Built Environment," Allston, MA.
- 2020 National Technical University of Athens, School of Architecture. Special Topics in the History and Theory of Architecture (9th sem.). Athens, Greece. *Online*.
- 2018 Massachusetts Institute of Technology, Department of Architecture, Lecture. Intro to Shape Grammars II. Cambridge, MA.
- 2016 Dartmouth College, Department of Music, *Third Annual Workshop in the Woods on Audio and Visual Synthesis*. New Hampshire, MA.
- 2016 Northwestern University, Talk at Design Descriptions Workshop, *Sixteenth International Conference on Design Computing and Cognition (DCC'16)*. Evanston, Chicago, IL, USA.
- 2015 Massachusetts Institute of Technology, Department of Architecture, Digital Structures Research Group. Cambridge, MA, USA.
- 2013 Aristotle University of Thessaloniki, School of Architecture. Lecture Series: Design through a Play of Undoing. November 28, 2013.
- 2013 Aristotle University of Thessaloniki, School of Architecture. Public lecture. Symposium: Paradigm Shift in Architecture: the Architect-Creator & The New Design Tools. May 31, 2013.

Media

- 2024 "From spatial rules to code: evaluating vision-language models in design," Public Video Talk produced by the Harvard Office of the Vice Provost for Advances in Learning. Upcoming.
- 2024 Harvard SEAS Newsletter. *Featured*: "The Language of Design: SEAS Class Combines Computation with Design Philosophies," by M. Goisman. August 23, 2024. [View Online](#)
- 2021 "The Geometries of Line Drawings." In [Imprint 01](#), Issue 1, MIT Architecture: pp: 78-79.

Workshops

- Fall/Spring 2024 "Artificial Intelligence and Architectural Work." Workshop for undergraduate architecture students at the School of Architecture. National Technical University of Athens. Athens, Greece
- Aug 2023 "Creative Use of Code and Data." Workshop for graduate students in design engineering at Harvard University. Science & Engineering Complex, Boston (Allston), MA.
- May 2021 "SHREC'21: Quantifying Shape Complexity." *Eurographics 2021 Workshop Track on 3D Object Retrieval (3DOR'21, online)*, Eurographics'2021, Vienna, Austria
- Jan 2018 "Design Without a Discipline," International Design Workshop. MIT Computation Group in collaboration with the UAI Design Lab in Santiago Chile. Sponsored by: MIT MISTI-Chile.

FELLOWSHIPS, GRANTS AND HONORS

- 2023 Harvard Data Science Initiative (HDSI) Research Grant
- 2022 MIT Hyzen Fellowship
- 2019-2022 Onassis Foundation Scholar

- 2020 Summer Work and Pedagogy Program Research Grant, MIT Department of Architecture
- 2018 Bill Mitchell++ Award, MIT School of Architecture & Planning
- 2017 MIT Presidential Fellowship
- 2018 MIT Graduate Student Council Travel Grant
- 2016-2018 Avalon Travelling Grant (multiple), MIT Department of Architecture
- 2015-2017 A.G. Leventis Foundation Scholar
- 2016 Floyd Naramore Architectural Fellowship, MIT Department of Architecture
- 2015 Gerondelis Foundation Grant
- 2014-2016 Graduate Fellowship, MIT Department of Architecture
- 2014 Highest Honors, Diploma Architect Engineer, Aristotle University, Greece
- 2013 Honorable Mention, National Architectural Ideas Competition, TEE-Greece
- 2011, 2013 15th and 16th Biennial of Young Artists

TEACHING EXPERIENCE

Current Roles

- Harvard University, Cambridge, MA
- 2024-Present Computing, Spatial Design, and Human Values (ES-138)
Role: Course developer and Instructor
Introduction to major traditions of design and computation research and scholarship, culminating to a student-initiated final research project.
- 2023-Present Collaborative Design Engineering Studio I (STU-1231)
Role: Co-Instructor
Graduate studio introducing ideas, methods and techniques essential for the design engineer. Joint offering between Harvard GSD and SEAS.

Previous Roles

- Role: Course Developer and Instructor
- Northeastern University, College of Arts, Media, and Design, Boston, MA
- Spring 2023 Studios in Data-Driven Visualization Technologies, Levels I & II (ARTG5330/5430)
- Boston Architectural College, Department of Architecture, Boston, MA
- Spring 2017 Advanced Architectural Design Studio: Research in Design Computing (DME2100)
Role: Graduate Teaching Assistant
- MIT Department of Architecture, Cambridge, MA
- 2017-2021 Proseminar/Research Seminar in Computation (4.581/4.582)
- Spring 2020 Architecture Design Studio, Level II (4.024)
- Spring 2020 Special Subject: Architectural Computation (4.s56)
- 2016, 2019 Introduction to Shape Grammars, Levels I & II (4.540/4.541)
- Spring 2015 Design Across Scales and Disciplines (4.110J/MAS.650J)
- Fall 2014 Architecture Design Option Studio (4.154)
- 2016, 2018 MIT Department of Electrical Engineering and Computer Science, Cambridge, MA
Introduction to Artificial Intelligence (6.034/6.844)

SERVICE

- External Reviewer Journals: *Environment and Planning B* (2019-Present); AI EDAM - *Artificial Intelligence for Engineering Design, Analysis, & Manufacturing* (2019-Present); *Technology | Architecture +*

Design (2018-Present); *Computer-Aided Design* (2019-Present); *The Journal of Architecture* (2023-Present); *Nexus Network Journal: Mathematics and Architecture* (2018-Present)
 Conferences: *Design Computing & Cognition* (2020–2024); Design Research Society (2024)

- 2023-2024 Innovation Council Member, Harvard John A. Paulson School of Engineering & Applied Sciences
 2023-2025 Graduate Admissions Committee Member, Master's in Design Engineering, Harvard GSD
 2021-2022 Graduate Admissions Committee Member, MIT SMArchS & PhD in Design & Computation
 2018-2020 Cabinet Representative for PhD students, MIT Architecture Student Council (ASC)
 2016-2021 Extra-Departmental Subjects Listing, MIT Department of Architecture. [View Online](#)
 2017–2019 Co-organizer: *Forum in Computation*. MIT Department of Architecture, Computation Group.
 2020 Co-organizer: *Algorithmic & Mathematical Methods in Design*. Sponsored by: Summer Work and Pedagogy Program, MIT Department of Architecture.
- Invited Critic Massachusetts Institute of Technology, Harvard University, Georgia Institute of Technology, Wenworth Institute of Technology, Boston Architectural College, National Technical University of Athens, Aristotle University of Thessaloniki
- Academic Research supervision: 8 graduate and undergraduate students from Harvard University, MIT, Supervision & Architectural Association (names available upon request). Advising Master's Theses Supervised: 1 (in-progress)

LANGUAGES AND TECHNICAL SKILLS

Languages

Greek (native), English (fluent), Armenian (mother's language), German (beginner)

Software and Technical Skills

Python, Processing, JavaScript (P5, D3), Rhino3D/Grasshopper, Adobe Suite, LaTeX, Digital Fabrication, Digital Sound Production and Computer Music Technology

OTHER EXPERIENCE

- 2021-Present Architect Consultant: Egnatia Group S.A., Thessaloniki, Greece
 05—09/2019 Research Intern: OPT Industries, Inc., Cambridge, MA, USA
 06—08/2016 Intern: AW-ARCH (Anmahian Winton Architects), Cambridge, MA, USA
 2013–2020 Architect/Designer: Horotechniki S.A., Thessaloniki, Greece
 2009-2013 Architect/Designer: Egnatia Group S.A., Thessaloniki, Greece
- Editorial Design and illustration for the book *Shapes of Imagination: Calculating in Coleridge's Magical Realm* by George Stiny (The MIT Press, 2022). Production: 2019-2021
- Contributions "The Black City Astrolabe: A Constellation of African Diasporic Women." Physical three-dimensional installation in collaboration with the [MIT Black City Group](#) on view at the 18th Biennale of Architecture in Venice, Arsenal, Venice, Italy, May 20–November 26, 2023. Sponsored by: [MIT Center for Art, Science & Technology \(CAST\)](#) and [Graham Foundation](#).
- Exhibitions "Histories of Negation | Black City: The Arkansas Edition." Exhibition in collaboration with the [MIT Black City Group](#), on view at the MIT's Department of Architecture Keller Gallery. Cambridge, MA, November 4–December 2, 2022. Sponsored by: [MIT Center for Art, Science & Technology](#) (CAST) and MIT SA+P.
- (selection) "Elements of Spatial Configuration of a Settlement of Huts on the Delta of Evros River." Mapping and field work project on view at the Boston Architectural College Faculty Exhibit. Boston, MA, February–May, 2018.

"Ouroboros." Physical model of shortlisted architectural design competition entry for the [NASA Centennial Challenge: 3D Printed Habitat](#) on view at Maker Faire by Maker Media, New York Hall of Science, New York, September 22-23, 2015. Press: [MIT News](#). Sponsored by: [MIT Digital Structures Group](#).

"Paperwave Pavilion." Physical three-dimensional installation on view at the Expo Pavillions of the 2015 International Association of Shell and Spatial Structures (IASS) Annual Symposium "Future Visions." Amsterdam, Netherlands, August 2015. Sponsored by: [MIT Digital Structures Group](#).

"MateReality: 25 under 25." Curation of exhibition with [archstudies.gr](#) in collaboration with [archisearch.gr](#) and [Design Lab](#), May-June, 2015. Technopolis area, Athens, Greece. [Press](#).

"National Ideas Competition for the Recreation of Public Spaces." Awarded competition entry in collaboration with [Horotechniki S.A.](#) on view at the Museum of Byzantine Culture as part of the exhibition series of [Imagine the City](#), June 20-29, 2014. Thessaloniki, Greece.

"National Ideas Competition for the Design of a Landmark (Toposimo) for the Faliro Bay in Athens." Competition entry and physical model on view at the [New Benaki Museum](#). February-March, 2013. Athens, Greece. Sponsored by: Ministry of Environment, Energy and Climate Change in collaboration with the Benaki Museum.

"Logic and Dissonance." Multimedia art installation on view at the 16th Young Artists Biennial ([BJCEM](#)), June 7–July 7, 2013. Mole Vanvitelliana, Ancona, Italy. Also on view at the [CAMP Contemporary Art Meeting Point](#), January 7–16, 2014. Athens, Greece. Sponsored by: Hellenic General Secretariat for Youth of Greece.

Pedagogical Training	2018 Kaufman Teaching Certificate Program, MIT Teaching+Learning Lab
Accreditation	2021 Architecture Registration, Technical Chamber of Greece (TEE-TCG)
Membership	Association for Computing Machinery (2014-Present) Association for Computer-Aided Design in Architecture (2014-Present) Onassis Scholar's Association (2022-Present) MIT Hellenic Students Association (2014-2022)
Art	Electronic music composition, production, and performance. Discography (2009–2015, 2024–): 1 album, 4 personal EPs, multiple remixes for other artists, appearances in 5 music compilations releases in record labels in Greece, Italy, Norway, Germany, and United States