

Marirena Kladeftira, Dr. Sc. ETH Zurich

Innovation Fellow (Fall '25) & Incoming Assistant Professor (Jan '26)

Department of Design Tech, AAP, Cornell University

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Education	ETH Zurich Doctor of Sciences (Dr. Sc. ETH Zurich) Supervisor: Benjamin Dillenburger	Zurich, Switzerland Feb 2024
	ETH Zurich MAS in Digital Fabrication	Zurich, Switzerland Sept 2017
	National Technical University of Athens Dipl. Arch. Engineering (MArch equivalent) <i>Honours: Magna cum Laude</i>	Athens, Greece Oct 2015
	École Nationale d'Architecture Paris Val de Seine Master I - Exchange student	Paris, France Jul 2012- Jul 2013
Academic positions	Cornell University Assistant Professor, <i>Tenure-Track</i> Department of Design Tech, AAP, Cornell University.	Jan 2026 –
	Cornell University Inaugural Design Tech Innovation Fellow Department of Design Tech, AAP, Cornell University.	Jan 2025 – Dec 2025
	École polytechnique fédérale de Lausanne (EPFL) Postdoctoral Researcher Jointly appointed between the Lab for Creative Computation (CRCL) and the Structural Xploration Lab (SXL). Research areas: Human-Robot Collaboration, HMI, Structural Reuse, Construction Robotics	Jan 2024 – Dec 2024
	ETH Zurich, National Center of Competence in Research Digital Fabrication Doctoral Researcher	Jul 2018 – Dec 2023

Hosted by the chair of Digital Building Technologies.
Research area: Additive manufacturing for ultralightweight structures.

ETH Zurich, Chair of Digital Building Technologies

Scientific Assistant Nov 2017 – Jun 2018
Researcher and Instructor in the MAS in Digital Fabrication
Research areas: BinderJetting technology for construction, Computational design, Digital craft.

Student Assistant Apr 2017 – Nov 2017

TU of Crete, Transformable Intelligent Environments Lab

Visiting Researcher Nov 2015 – Jun 2016
Hosted by Dean Oungrinis.
Research areas: HMI, Transformable architecture, Cognitive rehabilitation.

Professional Experience

Basler & Hofmann Zurich, Switzerland
Digital Product Manager Apr 2023 – Nov 2023

SAEKI Robotics Aargau, Switzerland
Computational Design [Freelance] Jun 2022 – Apr 2023

MD Architectures – Marc Dilet Architectural Agency Paris, France
Architectural Intern Mar 2013 – Apr 2013

Vassilis Tsegkis Architecture Firm Athens, Greece
Architectural Intern Jun 2010 – Jul 2010

Exhibitions

ReConfig 2025
Time Space Existence exhibition 2025, European Cultural Center, Venice, Italy

UNDO. Tangible Interaction for Robotic Construction 2025
Open Studio exhibition 2025, Cornell University, Ithaca, NY

Steel Gel Casting 2025
Open Studio exhibition 2025, Cornell University, Ithaca, NY

UNDO: Remote Intervention in Robotic Construction 2024
Exhibition and demo at Swiss Robotics Day

Prótóplasto	2023 – 2024
Invited exhibition at private facility by Halter AG	
Bespoke 3D printed joints	2022
Invited exhibition at “Impact Finance”, Bern, Switzerland	
Bespoke 3D printed joints	2022
Invited exhibition at the Swiss Sustainability Forum, Bern, Switzerland	
3D printing structures	2022
Invited exhibition at “Nachtaktiv Touch Wood”, ZAZ Bellerive Museum, Zurich, Switzerland	
Digital Bamboo	2021
Time Space Existence exhibition 2021, European Cultural Center, Venice, Italy	
Digital Bamboo	2020
Zentrum Architektur Zurich, ZAZ Bellerive, Switzerland	
Liquid Metal Pavilion	2017
SUSAS Shanghai Urban Space Art Season 2017, Shanghai, China.	
Acoustic Mirrors	2018 – 2020
Installation at the ETH Hönggerberg Campus, Zurich, Switzerland.	
The Alyki Wetland	2016
9th International Biennial of Landscape Architecture, Barcelona, Spain.	

Funding

Research Grants	
Cornell Design Tech Innovation Fellowship, USD 20,000	2025
Hewlett Packard Inc, CHF 4,000, <i>Author</i>	2021
ETH Innovation Partnership Grant, CHF 20,000, <i>Co-author</i>	2020
Funded In-Kind Support	
Halter, CHF 10,000, <i>Co-author</i>	2023
HS Hi-Tech, CHF 10,000, <i>Author</i>	2020
Fercher AG, CHF 14,000, <i>Author</i>	2020
SG Solutions AG, CHF 8,000, <i>Co-Author</i>	2020
ZAZ Bellerive Museum, CHF 5,000, <i>Co-Author</i>	2020
Declined/In revision	

HORIZON EUROPE CL5 - Digital Emerging “AI4COCO”, EUR 1,451,772 sub-grant (of 5.2 mi total), *Co-Author*
M-ERA.NET “Low Impact Metal AM”, EUR 567,420, *Co-Author*

Talks & Presentations

Invited Talks

Panel Discussion “The Future of the Intersection Between Design and Technology”, Cornell Tech, NYC, USA May 2025
Talk and panel discussion on Design Technology at Cornell Tech in New York City.

Invited lecture at Georgia Tech, GA, USA March 2025

Invited lecture at Florida International University, FL, USA March 2025

Invited lecture at Harvard GSD, MA, USA Feb 2025
Invited as part of the technology seminar series at the Graduate School of Design.

Invited talk and discussion at Texas Tech University, College of Architecture, online Feb 2025
Hosted by the Hi-DARS Lab and Prof. Sina Mostafavi.

Invited talk and panel discussion at Digital Futures 2025, online Feb 2025
Session “Emerging Greek Hybridities.” Hosted by Smaro Katsangelou and Neil Leich.

Invited public lecture at Kunsthalle, Zurich, Switzerland Nov 2024
Hosted by Prof. Catherine De Wolf.

Guest lecture at the Department of Civil, Environmental and Geomatic Engineering, ETH Zurich, Switzerland Nov 2024
Invited as part of the course lecture series “Digital creativity for a circular built environment”. Hosted by the chair of Circular Engineering in Architecture.

Invited lecture at Cornell University, Open Seminar Series, Department of Design Tech, NY, USA Apr 2024

Invited lecture at Yale School of Architecture, CT, USA Apr 2024
As part of the “Advanced Robotics” course lecture series. Hosted by Hakim Hasan.

Invited lecture at Princeton School of Architecture, NJ, USA Apr 2023

Invited lecture at the Master in Advanced Studies in Digital Fabrication, ETH Zurich, Switzerland Apr 2023
Lecture "Capsules of Complexity".

Invited presentation at "Nachtaktiv Touch Wood", ZAZ Bellerive Museum, Zurich, Switzerland Sep 2022
Outreach for scientific topics and activities to young people.

Invited talk at 3D Konzept Labs, Berlin, Germany Jul 2022
Session "Material – Trends und Applikationen (I)". Hosted by Prof. Sascha Peters.

Invited lecture at the University of Florida, UF College of Design, Construction and Planning, FL, USA Feb 2022

Invited lecture at the Master in Advanced Studies in Digital Fabrication, ETH Zurich, Switzerland Oct 2021
"Printing architecture. Socio-ecological implications".

Invited talk and panel at Shaping the City Forum, Venice Architecture Biennale 2021, Italy Oct 2021
"Solving Complexities, Saving Carbon". Hosted by the European Cultural Center.

Invited talk, Grasshopper User Meeting V, Berlin, Germany Mar 2018
Invisible Reflections", M. Kladeftira, M. Pachi.

Public Lecture, NTUA Public Lecture Series, Athens, Greece Mar 2015
"Complexity: in-between order and chaos".

Invited Interviews in Mass Media

Podcast and Film Interview Nov 2024
For the podcast series "Library of Reuse" in conversation with Prof. Catherine De Wolf at the Circular Engineering in Architecture research group, ETH Zurich.

TV Interview in "Gut zu wissen", Bayerischer Rundfunk, Germany Oct 2021
"Bauen mit Naturstoffen" (Building with natural materials)

Radio Interview at RTS Switzerland Mar 2021
"Construire en bambou et en impression 3D" (Building with bamboo and 3D printing)

Honors & Awards	Inaugural Innovation Fellowship, Design Tech, Cornell University	2025
	Prótóplasto - 3D Pioneers Challenge 2024, <i>finalist</i>	2024
	WireWise App - Digital Top 10 Switzerland	2024
	Front Cover - 3D Printing and Additive Manufacturing journal, Vol. 11	2024
	Frame Awards 2022 - Best use of material, <i>shortlisted</i>	2022
	Arc Awards 2022 - Digitalization, <i>honorable mention</i>	2022
	ACADIA '18, '19, '22 Student Scholarship	2018 - 22
	AG Leventis Foundation Fellow	2016 - 17
	Scholarship Grant for Postgraduate Studies at Harvard University AG Leventis Foundation, USD 12,000 (<i>declined to attend ETH Zurich</i>)	2016
	Merit-Based Scholarship, Harvard University, USD 10,000 (<i>declined to attend ETH Zurich</i>)	2016
	Bronze Medal for Innovative Equipment and Medical Services, HealthCare Business Awards	2016
	Indeseem Symposium Competition Re:Craft, TU Delft, 2nd place	2015
	Erasmus student scholarship, 12-month stipend	2012
	Award for top admission in the school of architecture NTUA (top 10%)	2008
	2 nd place among the graduating class of 2008, Salutatorian Pierce College, The American College of Greece (ACG)	2008
	Award for Academic Excellence, Top of the class (<i>yearly</i>) Greek Ministry of Education	2003-08

Publications

Refereed

Eleni Skevaki*, **Kladeftira, Marirena***, Ziqi Wang, Sihui Wu, Gudela Grote, Stefana Parascho. 2025. "TimberProxy. A Tangible Human-Robot Interface for Incremental Design and Fabrication of Timber Structures". In COMPUTING for RESILIENCE - the 44th Annual Conference of the ACADIA 2025, Miami, 2025. - *Submitted*

Settimi, Andrea, Damien Gilliard, Eleni Skevaki, **Marirena Kladeftira**, Julien Gamarro, Stefana Parascho, and Yves Weinand. 2025 "DiffCheck: a Point Cloud Comparison CAD-integrated Tool to Evaluate Digital Timber Fabrication Processes". In 6th International Conference on Structures and Architecture ICSA2025. Antwerp, Belgium.

Kladeftira, Marirena, Corentin Fivet, Stefana Parascho. 2025. "Re:Config. A human-robot collaborative process for the reuse and reconfiguration of existing timber structures in the European building stock". In 6th International Conference on Structures and Architecture ICSA2025. Antwerp, Belgium. - *Accepted*

Pittiglio, Alexandra, Xiliu Yang, **Marirena Kladeftira**, Felix Amtsberg, Achim Menges, Stefana Parascho. 2025. "Augmented Human-Robot Collaborative Bending: Human-robot collaboration for biogenic material bending-active assemblies". In Architectural Informatics - Proceedings of the 30th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA 2025). Tokyo, Japan.

Johnsson, Alberto, Eleni Skevaki, **Marirena Kladeftira**, Stefana Parascho. 2025. "Crafted by Hand and Machine: A Human-Robot Fabrication Workflow For the Use of Curved Wood in Construction". In Confluence - Proceedings of the 343rd Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2025) Conference. Ankara, Türkiye.

Leschok Matthias*, **Marirena Kladeftira***, Eftekhari Nik, and Benjamin Dillenburger. 2024. "Prótóplasto" in Fabricate 2024.

Eleni Skevaki, **Marirena Kladeftira**, Alexandra Pittiglio, and Stefana Parascho. 2024. "Interacting with Construction Robots: Collaborative Spatial Assemblies." In ACCELERATED DESIGN - Proceedings of the 29th CAADRIA Conference, Singapore, Singapore, 2024.

Leschok Matthias, **Marirena Kladeftira**, Fen Chen, and Benjamin Dillenburg. 2024. "Large-scale Hollow-Core 3D Printing (HC3DP): Variable Cross Section and Printing Features for Lightweight Plastic Elements" in 3D Printing and Additive Manufacturing 2024 11:3, 907-918.

Kladeftira, Marirena, Matthias Leschok, Eleni Skevani, Davide Tanadini, Patrick Ole Ohlbrock, Pierluigi D'Acunto, and Benjamin Dillenburg. 2022. "Digital Bamboo. A study on bamboo, 3D printed joints, and digitally fabricated building components for ultralight structures," in Hybrids & Haecceities - Proceedings of the 41st Annual Conference of the ACADIA 2022, Philadelphia, 2022.

Tanadini, Davide, Patrick Ole Ohlbrock, **Marirena Kladeftira**, Matthias Leschok, Eleni Skevaki, Benjamin Dillenburg, and Pierluigi D'Acunto. 2022. "Exploring the potential of equilibrium-based methods in additive manufacturing: the Digital Bamboo pavilion." In International Association for Shell and Spatial Structures IASS 2022. Beijing, China.

Bach, Pascal, Ilaria Giacomini, and **Marirena Kladeftira**. 2022. "Self-interlocking 3D printed joints for modular assembly of space frame structures." In Design Modeling Symposium 2022. Berlin, Germany.

Kladeftira, Marirena, Matthias Leschok, Eleni Skevaki, and Benjamin Dillenburg. 2021. "Redefining Polyhedral Space Through 3D Printing." In AAG Advances in Architectural Geometry 2020, 306-329. Paris, France.

Akizuki, Yuta, Mathias Bernhard, Reza Kakooee, **Marirena Kladeftira**, and Benjamin Dillenburg. 2020. "Generative Modelling with Design Constraints: Reinforcement Learning for Furniture Generation." In CAADRIA. Bangkok, Thailand.

Kladeftira, Marirena, Maria Pachi, Mathias Bernhard, Demetris Shammis, and Benjamin Dillenburg. 2019. "Design Strategies for a 3D Printed Acoustic Mirror." In Intelligent & Informed - Proceedings of the 24th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA 2019), Vol 1:123-32. Wellington, New Zealand.

Aghaei Meibodi, Mania, **Marirena Kladeftira**, Thodoris Kyttas, and Benjamin Dillenburg. 2019. "Bespoke Cast Facade, Design and Additive Manufacturing for Aluminum Facade Elements." In Proceedings of the 39th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA), 100-109. Austin, Texas, USA.

Kladeftira, Marirena, Demetris Shammias, Mathias Bernhard, and Benjamin Dillenburger. 2018. "Printing Whisper Dishes: Large-Scale Binder Jetting for Outdoor Installations." In Recalibration on Imprecision and Infidelity - Proceedings of the 38th Annual Conference of the Association for Computer Aided Design in Architecture, ACADIA 2018, 328–35. Mexico City, Mexico.

Ouggrinis, Kostantinos-Alketas, Krasoudakis, Antonios, Georgoulakis, Stratos, Kelesidi, Anna, **Kladeftira, Marianthi Eirini**, Katikaridi, Anastasia, Lykos, Giorgios. 2016. "Designing Multisensory Therapeutic Environments: Invention in the General Hospital of Chania, Greece." In Proceedings of the 2016 ANFA Conference, Salk Institute, San Diego, California.

Non-Refereed

Marirena Kladeftira. 2024 "Capsules of Complexity: Additively Manufactured Connections for Non-standard Space Frames".
Doctoral Dissertation NO. 29886 , ETH Zürich

Marirena Kladeftira, Pachi, Maria. 2017 "Invisible Reflections".
MAS DFAB Theses, ETH Zürich

Marirena Kladeftira. 2015. "Complexity: in-between order and chaos".
Theory Research Publication, Lecture Series 2015, Athens, NTUA

Contributions to Books

Kladeftira, Marirena, Marcelo Coelho, Daniel Leithinger, and Jenny E. Sabin. Design Tech Volumes 01. Cornell University, 2025.

Grigoriadis, Kostas, and Guan Lee. 3D Printing and Material Extrusion in Architecture: Construction and Design Manual. Berlin, Dom publisher, 2024.

Teaching Experience

Cornell's Master of Science in Design Technology

DESIGN 6297: Coding for Design I, Instructor. Fall 2025

DESIGN 6197/4197: Anthropocentric Models of Making with Coop Robots, Instructor Spring 2025

DESIGN 6152: Design Tech Studio: Design and Making Across Disciplines II, Co-Instructor. Spring 2025

EPFL Bachelor's Program

AR-211: Stereotomy, Co-Instructor Fall 2024

PENS-230: Digital ENAC. Code in Context., Co-Instructor. Spring 2024

ETH Zurich Bachelor's Program

052-0605-00L: Computational Design I, Exercise Tutor Fall 2022

052-0605-00L: Computational Design I, Lecturer and Exercise Tutor Fall 2021

ETH Zurich Master's Program

063-0640-00L: Advanced Computational Design, Exercise Tutor Spring 2019

ETH Zurich Master in Advanced Studies in Digital Fabrication

069-0002-00L: Integrated Design and Fabrication Studio. Spring 2023
One-Human Roof.

069-0100-00L: Master's Thesis Advisor Summer 2021
Robotic assembly of self interlocking carbon fiber structures with 3D printed connections.

069-0100-00L: Master's Thesis Advisor Summer 2020
Illuminating Links. Steel gel casting for integrated architectural connections.

069-0002-00L: Integrated Design and Fabrication Studio Spring 2020
Summer Cluster.

069-0100-00L: Master's Thesis Advisor Summer 2019
AI Table. Generative Modeling With Design Constraints.

069-0100-00L: Master's Thesis Advisor Summer 2018
Non-Regular Freedom.

Workshops

"Human Robot Interaction", Design Modelling Symposium 2024, Co-Instruction with E. Skevaki, Z. Wang Sept 2024

"Undo: Human-Robot Reconfiguring Timber", Future of Construction, Co-Instruction with E. Skevaki, Z. Wang, S. Wu, J. Wang Nov 2024

Advising

PhD students

Eleni Skevaki EPFL '26
Interacting with Construction Robots, Primary Advisor: Prof. Parascho

Alexandra Nicole Pittiglio EPFL '27
Human-Robot Collaborative Assembly of Non-Standard Active Bending Structures, Primary Advisor: Prof. Parascho

Master's students

Artur Billote EPFL '25
Johan Link EPFL '25
Alberto Johnsson EPFL '24
Narges Vahdani Lucerne University of Applied Sciences and Arts '24
Ilaria Giacomini ETH Zurich '21
Pascal Bach ETH Zurich '21
Lazlo Mangliar ETH Zurich '20
Yuta Akizuki ETH Zurich '19
Alexander Enz ETH Zurich '18

Service

Add-hoc Reviewer

3D Printing and Additive Manufacturing Journal (3DP+)
Mechanics of Advanced Materials and Structures Journal
Cogent Engineering Journal
ACADIA - Association for Computer Aided Design in Architecture
CAADRIA - Computer-Aided Architectural Design Research in Asia
CAAD Futures

Invited Studio Critic

Seminar "Parametric Assemblies", Cornell University, Ithaca, NY
Invited by Lawson Spencer.

Course "Digital creativity for a circular built environment", ETH Zurich, Switzerland
Invited by Catherine De Wolf.

DDF Studio, Karlsruhe Institute of Technology (KIT), Germany
Invited by Moritz Dörstelmann.

Course "Digital Foundations", ETH Zurich, Germany
Invited by Petrus Aejmelaes-Lindström.

Editing Work

Kladeftira, Marirena, Marcelo Coelho, Daniel Leithinger, and Jenny E. Sabin.
Design Tech Volumes 01. Cornell University, 2025.

Volunteering

Salary task force member, Scientific Staff Association AVETH, ETH Zurich
Mentorship Program, American College of Greece
HELLASTOCK, VESSEL Non-profit organization, Athens

Professional Affiliations

Licensed Architect Engineer, Technical Chamber of Greece (TEE-TCG)
Member of International Association for Shell and Spatial Structures
Member of Association for Computer Aided Design in Architecture (Board
Member Nomination 2024,2022)

Press *Selected*

Prōtóplasto. 2024
a+u magazine 2024:07. Feature: Post-Digitality in Architecture.

Building with Bamboo. 2023
Design and Technology of a Sustainable Architecture
Third and revised edition. Gernot Minke. 2023 Birkhauser.

Digital Bamboo. Arc Award Magazine 2022. 2022
Schweizer Baudokumentation.

Designing tomorrow's world means, first of all, finding solutions for fairer access to resources. Domus Design Magazine. 2021
<https://www.domusweb.it/en/Advertorial/2021/06/03/european-cultural-centre-/architecture-and-contemporary-challenges.html>

Nachhaltigkeitspotenziale durch 3D-Gebaudedruck. Dr. Sascha Peters in Deutsche Bauzeitung. Issue July 2021. Page 70. 2021

Students at ETH Zurich use digital fabrication methods to build bamboo pavilion. Designboom. 2021
<https://www.designboom.com/architecture/eth-zurich-digital-fabrication-bamboo-pavilion-02-06-2021/>

Time Space Existence Stories. European Cultural Center. 2021
<https://timespaceexistence.com/2021/07/22/bamboo-sustainable-planet/>

Architectural pavilions: architects packing a big punch with small structures. Wallpaper. 2021

<https://www.wallpaper.com/gallery/architecture/bold-architectural-pavilions-and-temporary-structures>

Digital Bamboo Pavilion: fabbricazione digitale e materiali naturali, il padiglione in bamboo dell'ETH. Habitante.it 2021

A lightweight bamboo pavilion made with digital fabrication. Material District. 2021

<https://materialdistrict.com/article/a-lightweight-bamboo-pavilion-made-with-digital-fabrication/>

Digital Bamboo on display. Franziska Schmid on ETH News. 2021
<https://ethz.ch/en/news-and-events/eth-news/news/2021/02/digital-bamboo-on-display.html>

Bambus berechnen. Andreas Herzog in Hochparterre architectural magazine. 2021

<https://www.hochparterre.ch/nachrichten/architektur/blog/post/detail/bambus-berechnen/1602676470/>

HS HI-TECH and ETH mix 3D printing tech for Digital Bamboo pavilion. Davide Sher in 3D Printing Media Network. 2021

<https://www.3dprintingmedia.network/hs-hi-tech-and-eth-mix-3d-printing-technologies-for-digital-bamboo-pavilion/>

Digital Bamboo Pavilion. Melina Arvaniti-Pollatou in Archisearch. 2021
<https://www.archisearch.gr/student-works/digital-bamboo-pavilion-by-students-of-the-master-in-advanced-studies-in-architecture-and-digital-fabrication-2019-2020/>

The Master of Advanced Studies in Architecture and Digital Fabrication at ETH Zürich Unveils its Latest Thesis Achievements. Mónica Arellano on Archdaily. 2021

<https://www.archdaily.com/952445/the-master-of-advanced-studies-in-architecture-and-digital-fabrication-at-eth-zurich-unveils-its-latest-thesis-achievements>

ETH Zurich casts intricate metal facade in a 3D-printed mould. Rima Sabina Aouf on Dezeen. 2018

<https://www.dezeen.com/2018/06/22/eth-zurich-metal-facade-3d-printing-mould-technology/>