Name Hernan Casakin

CURRICULUM VITAE AND LIST OF PUBLICATIONS

Personal Details

Name: Hernan Casakin

Address and telephone number at work: Ariel University, School of Architecture, P.O. Box 3, 44837, Ariel, ISRAEL 03-9066242; email: casakin@ariel.ac.il

Education

Undergraduate and Graduate Studies

B.Sc.	1984-1989 - National University of Mar del Plata, Faculty of
	Architecture and Town Planning. Mar del Plata, Argentina.
M.Sc.	1990-1993 - Technion- Israel Institute of Technology, Department of
	Architecture and Town Planning
	Name of advisor: Rivka Oxma.Title of thesis: Modeling Design as a Top-
	Down Refinement Process: The Patio House Type
D.Sc.	1993-1998 - Technion- Israel Institute of Technology, Department of
	Architecture and Town Planning
	Name of advisor: Gabriela Goldschmidt. Title of thesis: The Role of
	Analogy and Visual Displays in Architectural Design
Posdoc studies	1999 - Hamburg University, Graduate School, Department of Cognitive
	Sciences. Name of advisor: Christian Freksa. Title of Research Project:
	Wayfinding, Spatial Problem-Solving, and Map Representation of the
	Urban Environment

• Academic Ranks and Tenure in Institutes of Higher Education

- 2016 Visiting Professor, Aalto University, Finland. Department of Civil Engineering (August-September).
- 2014 Present: Associate Professor. Ariel University, School of Architecture, Ariel, Israel. (February)

Hernan Casakin

- 2013 Sabbatical leave: Visiting Research Fellow. TUDelft, Delft, The Netherlands. Faculty of Architecture, Department of Urbanism. Environmental Technology and Design group. (March – August)
- 2012 Sabbatical leave: Visiting Research Fellow. TUDelft, Delft, The Netherlands. Faculty of Industrial Design Engineering, Department of Product Innovation Management. Design Theory and Methodology group (March –August)
- 2006 2009 Lecturer. Tel Aviv University. The Porter School of Environmental Studies (2 hours- 1 semester)
- 1998 2009 Lecturer. Ariel University Center of Samaria, School of Architecture, Ariel, Israel.
- 2009 2014 Senior Lecturer. Ariel University, School of Architecture, Ariel, Israel.
- 2001 2005 Research Fellow. Tel Aviv University, Department of Geography and Environmental Studies, Laboratory of Cognitive and Environmental Studies (ESLab) Tel Aviv, Israel (Directed by Prof. Juval Portugali).
- 1999 2005 Lecturer. The College of Management, Academic Studies, Department of Interior Design, Rishon Letzion, Israel (2 hours- 1 semester)

• Professional Activities

- (a) Editor or member of editorial board of scientific journals
- 2023 Present Member of Editorial Board of Archnet-IJAR: International Journal of Architectural Research (ARCH) (Emerald Publishing)
- 2021 Present Member of Editorial Board of Architecture (MDPI)
- 2020 Present Member of Editorial Board of *Buildings* (MDPI)
- 2019 Present Member of Editorial Board International Journal of Design Creativity and Innovation (Taylor & Francis)
- 2018 Present Review Editor *Frontiers in Psychology* Environmental Psychology section

Hernan Casakin

2015 – Present	Member of editorial board Architext - Journal of Architecture, Ariel
	University, School of Architecture

- 2007 Present Member of editorial board *Journal of Civil Engineering and Architecture*, David Publishing (Scientific Journal)
- 2007 2018 Member of editorial board *Open Environmental Journal*, (Scientific Journal), Bentham Open Publisher
- 2007 2018 Member of editorial board Iridescent, the *Icograda Journal of Design Research* (from 2014 Journal of Communication Design: Interdisciplinary and Graphic Design Research, Routledge/Taylor & Francis) (Scientific Journal).
- 2010 2012 Member of editorial board Journal of Town & City Management, Henry Stewart Publications. (Scientific Journal)

(b) <u>Member of scientific review board of international conferences</u>

2023

Scientific Advisory Board of the

Eleventh International Conference on Design Computing and Cognition (*DCC*'24), 6-10 July 2024, Concordia University, Montreal, Canada.

International Review Panel for 24th International Conference on Engineering Design (ICED23), Bordeaux, France, 24-28 July 2021.

2022

Scientific Advisory Board of the 17th International Design Conference - DESIGN 2022, May 23-26, Dubrovnik - Cavtat – Croatia.

Scientific Advisory Board of the *Tenth International Conference on Design Computing and Cognition (DCC'22)*, 4-6 July 2022, University of Strathclyde, Glasgow, Scotland UK.

2021

Scientific Program Committee of the *DTRS13 - Design Thinking Research Symposium. Technion, ITT,* Haifa, Israel. March 22-24, 2022.

International Review Panel for 23nd International Conference on Engineering Design (ICED21), Gothenburg, Sweeden, 16-20 August 2021.

International Scientific Review Board for *EPDE2021 – International Conference on Engineering and Product Design Education*, Herning, Denmark. 10-11 September 2021.

2020

Scientific Program Committee of the *Sixth International Conference on Design Creativity (ICDC2020)* University of Oulu, Finland. August 26–28, 2020. Virtual Conference. Chair for the Session Creativity in collaborative and participatory design.

Scientific Advisory Board of the *16th International Design Conference - DESIGN 2020*, May 18-21, Dubrovnik - Cavtat – Croatia.

Scientific Advisory Board of the *Ninth International Conference on Design Computing and Cognition (DCC'20)*, 12-13 December 2020, Georgia Institute of Technology, Atlanta, USA.

International Scientific Review Board for *EPDE2020 – International Conference on Engineering and Product Design Education*, Herning, Denmark. 10-11 September 2020.

2019

International Review Panel for 22nd International Conference on Engineering Design (ICED19), Delft, The Netherlands, 5-8 August 2019. International Scientific Review Board for EPDE2019 – International Conference on Engineering and Product Design Education, Glasgow, 12-13 September 2019.

International Scientific Committee for XV International Conference on Environmental Psychology-PSICAMB – Community, resources and sustainability: the challenge of territories. Tenerife, Spain, July, 16-19. International Scientific Review Board for *EPDE2018 – International Conference on Engineering and Product Design Education*, London, 6-7 September 2018.

Scientific Advisory Board of the *15th International Design Conference - DESIGN 2018* May 21-24, Dubrovnik - Cavtat – Croatia. Chair of session Experiments in Design Education.

Scientific Advisory Board of the *Eight International Conference on Design Computing and Cognition (DCC'18)*, 2-4 July 2018, Politecnico di Milano, Lecco Campus, Italy

International Program Committee of the Computational Analogy Workshop – Annual Conference on Case-Based Reasoning (ICCBR-18), Stockholm, Sweeden. July 9-12.

2017

International Program Committee of the Computational Analogy Workshop – Annual Conference on Case-Based Reasoning (ICCBR-17), Trondheim, Norway. June 26-28.

International Scientific Review Board for *EPDE2017 – International Conference on Engineering and Product Design Education*, Oslo, 7-8 September 2017.

International Review Panel for 21st International Conference on Engineering Design (ICED17), Vancouver, Canada, 21-25 August 2017.

Scientific Program Committee of the *Fifth International Conference on Design Creativity (ICDC2018)* University of Bath, UK. January 31 – February 2, 2018.

Chair of session Visions and Futures in Architecture. Selected for publication in the *International Journal of Contemporary Architecture - New ARCH*. June 7-9. University of Hong Kong

2016

International Program Committee of the Computational Analogy Workshop – 24th International Conference on Case-Based Reasoning (ICCBR-16), Georgia University, Atlanta. 31 October – 2 November, 2016.

International Scientific Review Board for *EPDE2016 – International Conference on Engineering and Product Design Education*, Aalborg, 8-9 September

Scientific Advisory Board of the Seventh International Conference on Design Computing and Cognition (DCC'16), 27-29 June 2016, Northwestern University, Evanston (Chicago), USA.

Scientific Advisory Board of the *14th International Design Conference - DESIGN 2016*, May 16-19, Dubrovnik - Cavtat – Croatia.

2015

International Review Panel for 20th International Conference on Engineering Design (ICED15), Milano, Italy, 27-31 July 2015.

International Review Committee for *Learn x Design 2015. 3rd International Conference for Design Education Researchers*, Chicago, USA, June 28–30.

International Review Panel for *The Third International Conference on Design Creativity (3rd ICDC)* 12-14 January 2015, Bangalore, India.

2014

Member of the Best Poster Prize Committee. *Sixth International Conference on Design Computing and Cognition (DCC'14)*, 23-25 June, University College London, UK.

Scientific Advisory Board of the Sixth International Conference on Design Computing and Cognition (DCC'14), 23-25 June, University College London, UK.

Scientific Advisory Board of the *13th International Design Conference - DESIGN 2014*, May 19-22, 2014, Dubrovnik - Cavtat – Croatia.

2013

International Scientific Review Board for *EPDE2013 – International Conference on Engineering and Product Design Education*, Dublin, 5-6 September

International Review Panel for 19^h International Conference on Engineering Design (ICED13), Seoul, Korea, 19-22 August 2013.

International Review Panel *for DesignEd Asia 2013 Conference*. Hong Kong Design Centre, Hong Kong Design Institute, and Hong Kong Polytechnic University. 3-4 December 2013

2012

International Scientific Review Board for *EPDE2012 – International Conference on Engineering and Product Design Education*. September 6-7, Artesis University College, Antwerp.

Scientific Advisory Board of the *12th International Design Conference - DESIGN 2012*, May 21st-24th, 2012, Dubrovnik - Cavtat – Croatia.

Scientific Advisory Board of the *Fifth International Conference on Design Computing and Cognition (DCC'12)*, 7-9 June 2012, Texas A&M University, College Station, Texas.

International Programme Committee of the 2nd International Conference on Design Creativity (ICDC) .18-20 September 2012, Glasgow, UK.

International Review Panel for *DRS Cumulus 2013.* 2nd International Conference for Design Education Researchers. Oslo, 14-17.

International Review Panel for *DesignEd Asia 2012 Conference*. Hong Kong Design Centre, Hong Kong Design Institute, and Hong Kong Polytechnic University. 4-5 December 2012

2011

International Review Panel for 18th International Conference on Engineering Design (ICED11), Copenhagen, 15-19 August 2011.

International Scientific Review Board for *EPDE2011 – International Conference on Engineering and Product Design Education*. September 8-8, City University, London.

Scientific Program Committee of the 2nd International Seminar Architecture of Difference. Universidade Lusiada de Lisboa. Lisbon, 15-18 June.

International Review Panel for *DesignEd Asia 2011*. Hong Kong Design Centre. Hong Kong Polytechnic University. 29-30 November 2011

2010

Scientific Program Committee of the *First International Conference on Design Creativity (ICDC2010)* Kobe International Conference Center, Kobe, Japan. November 29 – December 1 2010.

Scientific Advisory Board for *The Fourth International Conference on Design Computing and Cognition (DCC'10)* University of Stuttgart, Germany held on 12-14 July 2010.

Convener for the Symposium The Role of Place Identity in the Perception, Understanding, and Design of Built Environments. 2010 IAPS (International Association for People-Environment Studies) Conference: Vulnerability, Risk and Complexity: Impacts of Global Change on Human Habitats. Leipzig, Germany. June 27-July 2.

Chair for the Session Place identity in different built environments. 2010 IAPS (International Association for People-Environment Studies) Conference: Vulnerability, Risk and Complexity: Impacts of Global Change on Human Habitats. Leipzig, Germany. June 27-July 2.

Jury for Evaluation of 5th Year Final Design Projects. School of Architecture, Tel Aviv University. August 16.

2009

Jury for Evaluation of 5th Year Final Design Projects. School of Architecture, Tel Aviv University. September 8.

Co-organizer of the Annual Exhibition of the Faculty of Architecture. Mammilla Compound, Jerusalem. July 23-31.

2008

Scientific Advisory Board for *The Third International Conference on Design Computing and Cognition (DCC'08)* Georgia Institute of Technology, Atlanta, Georgia June 23-25, 2008.

2006

Scientific Advisory Board for *The Second International Conference on Design Computing and Cognition (DCC'06)*, Technical University of Eindhoven, Netherlands, July 10-12

Supervision of Research students: PhD Students

2020-to date Xinhui Hu - PhD student, Oulu University, Finland (jointly with Prof. Georgi Georgiev) – research proposal approved.

Supervision of Research students: Post-doctoral Students

2021-to date Dr. Vijayakumar Nanjappan - Post-doctoral student, Oulu University, Finland (jointly with Prof. Georgi Georgiev).

2019-to 2022 Dr. Georgios Koronis - Post-doctoral student, in Singapore University of Technology and Design, SUTD (jointly with Prof. Arlindo Silva).

Awards, Citations, Honors, Fellowships

(a) Honors, Citations and Awards

- 2018 Top 1% of Reviewers in Cross-Field Category. Awarded by Publons Global Peer Review Awards, Web of Science Group.
- 2017 Outstanding Contribution in Reviewing in 2017. Awarded by Elsevier and Design Studies.

Hernan Casakin

2014	Excellence in Peer Review in 2013. Awarded by Elsevier and Design Studies.
2013	ICED13 Reviewers' Favorite Paper, rated in the top 10% papers based on reviewers' scores. ICED13 19 ^h International Conference on Engineering Design (ICED13), Seoul, Korea, 19- 22 August.
2012	Excellence in Research. Awarded by Ariel University
1998	Technion, Israel Institute of Technology, Haifa, Israel - Miriam and Gerhard Karplus Award for D.Sc. thesis The Role of Analogy and Visual Displays in Architectural Design.
2007	Invited by the United States National Academy of Sciences, and the University of Seville to participate in the Middle East Frontiers of Science and Engineering (FOSE07) Seville, Spain. March 15-17
1994	Technion, Israel Institute of Technology, Haifa, Israel - Leon Riskin Award for M.Sc. thesis Modeling Design as a Top-Down Refinement Process: The Patio House Type.
1992	Etanit Building Products Ltd. Award for the Project An application of artificial intelligence to housing. Technion, IIT, Haifa, Israel
1989	Convocatoria de ideas urbano-arquitectonicas para la ciudad (Summoning urban architectural ideas for the town) Competence organized by the Architects Association of the Province of Buenos Aires and, the National University of Mar del Plata. Award for the project Urban Design for the Harbor Area of Mar del Plata. Mar del Plata, Argentina.

(b) <u>Fellowships</u>

Israel Science Foundation – ISF. PI Casakin, H. Subject: How framing 2022 and reframing in design problem-solving affects the quality of solutions. Period of grant: 3 years – Amount \$ 116,000 (378,000 shekels).

Hernan Casakin

1999	Hamburg University, Graduiertenkolleg Kognitionswissenschaft
	(Graduate School, Department of Cognitive Sciences), FB Informatik.
	Fellowship for Postdoctoral Studies
1995-1998	Increased Full Scholarship for pursuing PhD studies. Awarded by the Technion -Israel Institute of Technology, Haifa, Israel.
1993 - 1994	Increased Full Scholarship for pursuing M.Sc. studies. Awarded by the Technion-Israel Institute of Technology, Haifa, Israel.
1993	Technion- Israel Institute of Technology, Haifa - Aaron and Miriam Gutwirth Memorial. Fellowship for excellence in graduate studies., Israel.

• Scientific Publications

Citation Index

H-index (ISI / Google Scholar): 14/28

Total number of citations of all articles (ISI / Google Scholar): 599/3011

Total number of citations without self-citations (ISI):489

(a) Editorship of collective volumes

- Casakin, H.,* & Wodehouse, A. (Guest Editors) (2020) Special Issue on Design Creativity in Architecture and Engineering. *Buildings*.
- Casakin, H.,* & Bernardo, F. (Eds.) (2012) The Role of Place Identity in the Perception, Understanding, and Design of the Built Environment. Bentham Science Publishers. 231 pages. Citations=68

(b) Chapters in collective volumes since last promotion

 Casakin, H.,* & Cascini, G. (*To appear*). Multi-disciplinary design teamwork: quality of collaboration and implications for extending the frontiers of design in education. *Expanding the frontiers of design: A blessing or a curse?*. In E. Tarazi and G. Goldschmidt (Eds.). CRC Press, Routledge/Taylor & Francis group. (Selected for publication after the *DTRS13* -Design Thinking Research Symposium. Technion, *ITT*, Haifa, Israel. March 22-24.)

- Casakin, H.,* & Kreitler, S. (2020). Creativity in Architecture: An Overview. *New Frontiers in Creativity*. In S. Kreitler (Ed.). Nova Science Publishers: NY, pp 323-346.
- Casakin, H.,* (2017). Updated edition. Metaphorical Reasoning and Design Creativity: Consequences for Practice and Education. *Encyclopedia of Creativity*, *Invention, Innovation, and Entrepreneurship*. In E. G. Carayannis (Ed.) Springer Science & Business Media: Secaucus, NJ. DOI:10.1007/978-1-4614-6616-1_436-2.
- Casakin, H.,* & Singh, V. (2016). A Framework to study the multi-disciplinary profile of architectural design students. *Quality, Mobility, and Globalization in the Higher Education System A Comparative Look at the Challenges of Academic Teaching*. In N. Davidovitch. Nova Science Publishers: NY, pp 113-122.
- 5. Casakin, H.,* & Reizer, A. (2016) Apego al Lugar y Satisfaccion de Vida entre los Habitantes del Kibutz Tradicional y el Kibutz Renovado. (Place Attachment and Life Satisfaction in the Residents of the Traditional Kibutz and the Renewed Kibutz). *Ciudades Amigables- Perspectivas Politicas y Practicas*. In C. Egea Jiménez, and D. Sanchez (Eds.) Editorial Comares: Granada, pp. 91-108.
- Goldschmidt, G., Casakin, H., Avidan, Y., & Ronen, O. (2016) Fun follows function or function follows fun? Three studio critiquing cultures. *Analyzing Design Review Conversations*. In S. Robin Adams & J. A. Siddiqui. Purdue Publishers, pp. 457-483. (Selected for publication after the 10th Design Thinking Research Symposium – *Analyzing Design Review Conversations*. 12-15. October, Purdue University, West Lafayette, Indiana.) Citations=44
- Casakin, H.,* & Reizer, A. (2016) Place Attachment and Perceived Environmental Uncertainty in Elder Adults Living in the Renewed Kibbutz. *Environmental Gerontology in Europe and Latin America, Policies and Perspectives on Environment and Aging.* In D. Sanchez-Gonzalez and V. Rodriguez-Rodriguez (Eds.), Springer, 203- 218. Web of Science. Core Collection. Citations=2

- Abbam Eliot, E., Cherian, J., & Casakin, H. (2015) Ethnicity Marketed to and Consumed by the Transcultural Consumer. Ethnic Marketing. In Jamal, A., Penaloza, L., and Laroche, M. (Eds.) Routledge. ISBN: 978-0-415-64363-4. Web of Science. Core Collection. Citations=4
- Casakin, H.,* & Badke-Schaub, P. (2015) Team Mental Models in Design Problem Solving: An Interdisciplinary Perspective. *Advances in Psychology Research, Nova Publishers.* In A. M. Columbus. Nova Science Publishers: NY, pp. 169-182.
- Casakin, H.,* & Badke-Schaub, P. (2015) Mental Models and Creativity in Engineering and Architectural Design Teams. *Design Computing and Cognition '14*. In J.S. Gero, and S. Hanna. Springer International Publishing AG: Cham, pp. 155-171. ISBN 10: 3319149555 (Published after the *Sixth International Conference on Design Computing and Cognition (DCC'14)*. University College London, UK. 23-25 June.) Citations=26
- Casakin, H.,* & Kreitler, S. (2015) Motivation in Design as a Driving Force for Defining Motives of Design. *Principia designae- Pre-Design, Design, and Post-Design:*. In Taura, T. (Ed.) Springer, Tokyo. pp. 77-89. DOI 10.1007/978-4-431-54403-6_6. Citations=1

(b) Chapters in collective volumes, running numbers

- Casakin, H.*, & Badke-Schaub, P. (2013) The Psychology of Creativity: Mental Models in Design Teams. *Psychology of Creativity*, In A. Antonietti, B. Colombo, and D. Memmert. Nova Science Publishers: NY, pp. 167-180. ISBN: 978-1-62808-155-8. ISBN: 978-1-63482-482. Citations=16
- Casakin, H.,* (2013) Metaphorical Reasoning and Design Creativity: Consequences for Practice and Education. *Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship.* In E. G. Carayannis (Ed.) Springer Science & Business Media: Secaucus, NJ, pp.1260-1267. DOI 10.1007/978-1-4614-3858-8. Citations=6
- Casakin, H.,* (2012) Visual Analogy as a Cognitive Stimulator for Idea Generation in Design Problem Solving. *The Psychology of Problem Solving: An Interdisciplinary Approach*. In S. Helie (Ed.) Nova Science Publishers: NY. ISBN: 978-1-62257-589-3. Citations=16

- 15. Casakin, H.,* & Kreitler, S. (2012) Studying Design Problem Solving Through the Theory of Meaning. *The Psychology of Problem Solving: An Interdisciplinary Approach*. In S. Helie (Ed.) Nova Science Publishers: NY. ISBN: 978-1-62257-589-3. Citations=4
- Casakin, H.,* Neikrug, S. (2012) Place identity in high and low-end neighborhoods as perceived by the elder. *The Role of Place Identity in the Perception*, *Understanding, and Design of the Built Environment*. In H. Casakin & F. Bernardo (Eds.) Bentham Science Publishers. pp. 107-119. eISBN: 978-1-60805-413-8. Citations=12
- 17. Casakin, H.,* & Abbam Elliot, E. (2012) Place Identity Principles: Cultural Metaphors in a Mexican Environment. *The Role of Place Identity in the Perception, Understanding, and Design of the Built Environment*. In H. Casakin & F. Bernardo (Eds.) Bentham Science Publishers. pp. 146-162. eISBN: 978-1-60805-413-8. Citations=3
- Kreitler, S. & Casakin, H. (2012) Motivation for Creativity in Design: Its Nature, Assessment and Promotion. *Handbook on Psychology of Motivation: New Research*. In J. N. Franco and A. E. Svensgaard (Eds.) Nova Science Publishers. pp. 107-124. ISBN: 978-1-62100-755-5. Citations=2
- Casakin, H.,* (2010) From Theory to Practice 39 opinions. In *Creativity, Design* and Education. Theories Positions and Challenges, A. Williams, M.J. Ostwald & H.H. Askland (Eds.), ALTC: Sydney, pp. 40-45. ISBN: 9780980554533.
- 20. Casakin, H.,* (2008) City Games as a Framework for Studying Spatial Information and the Dynamics of Urban Design. *Negations to Negotiations a collection of Essays*. In P. Maiti (Ed.) DK Publishers Distributors, New Delhi. pp. 353-374. Citations=3
- 21. Casakin, H.,* & Omer, I. (2008) What Features and Structural Relationships make the Streets of Tel Aviv City being Legible? An Urban Design Perspective. *Negations* to Negotiations - a collection of Essays. In P. Maiti (Ed.) DK Publishers Distributors, New Delhi. pp. 375-391. Citations=6

Porat, A. & Casakin, H. (2008) Spatial Representations in Closed 3D Spaces: Key Elements and implications for Design. *Negations to Negotiations - a collection of Essays*. In P. Maiti (Ed.) DK Publishers Distributors, New Delhi. pp. 37-53.

(c) Conference proceedings since last promotion

- Georgiev, G., Nanjappan, V., Casakin, H., & Soomro, S. (2023). Collaborative teamwork prototyping and creativity in digital fabrication design education. 24th *International Conference on Engineering Design (ICED23)*, Bordeaux, France, 24-28 July.
- Xinhui, H., Casakin, H., & Georgiev, G. (2023). Bridging designer-user gap with a virtual reality-based empathic design approach: Contextual information details. 24th International Conference on Engineering Design (ICED23), Bordeaux, France, 24-28 July.
 - Georgiev, G., Sanchez Milara, I., Soomro, S., Casakin, H., & Nanjappan, V. (2023). Sustainable Prototyping Challenges in Digital Fabrication Design Education. *E&PDE2023 25th International Conference on Engineering and Product Design Education: Design Education – Responsible innovation for global co-habitation*, Elisava, Barcelona School of Design, Barcelona, 7-8 September.
- Sofer, H., Casakin, H., & Gero, J. (2023). Temporal effect of immersive VR on student-tutor interaction in architectural design crits. 41st Education and Research in Computer Aided Architectural Design in Europe (eCAADe) Conference, Graz, Austria, September 20-23.
- Casakin, H.* (2023). Influencia de las fachadas de edificios de estilo de alta tecnología y estilo internacional sobre el sentimiento de admiración. *IV Congreso Interdisciplinario de Investigación en Arquitectura, Diseño, Ciudad y Territorio*. Santiago de Chile, Chile, April 26-28.
- Sofer, H., Casakin, H., & Gero, J. (2022). Effect of immersive VR on student-tutor interaction in design critiques. 40th Education and Research in Computer Aided Architectural Design in Europe (eCAADe) Conference, Ghent, Belgium, September 13-16.

- Georgiev, G., Nanjappan, V., Casakin, H., Soomro, S., & Sanchez Milara, I. (2022). Perceptions of digital fabrication in design education: Skills, confidence, motivation, and enjoyment. *NordDesign 2022*, Kgs, Lyngby, Denmark, August 16-19. Virtual, Online. Citations=1
- Casakin, H.,* Koronis, G., & Silva, A. (2022). The Role of the brief in individual versus collaborative design ideation. *The European Conference on Arts, Design & Education* ECADE. Porto, Portugal, July 7-10.
- Casakin, H.,* & Cascini, G. (2022). Multi-disciplinary design teamwork: quality of collaboration and implications for extending the frontiers of design in education. *DTRS13 -Design Thinking Research Symposium. Technion, ITT,* Haifa, Israel. March 22-24. (Selected for publication in the book *Expanding the frontiers of design: A blessing or a curse?*. In E. Tarazi and G. Goldschmidt (Eds.). CRC Press, Routledge/Taylor & Francis group.)
- Koronis, G., Casakin, H., Silva, A., & Siew, J. W. W. (2021). The Use of Analogies and the Design Brief Information: Impact on Creative Outcomes. *ASME 2020 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. IDETC/CIE2021, August 17-20, Virtual, Online. Citations=2
- Koronis, G., Casakin, H., Silva, A., & Kang, J. K. S. (2021). The influence of design brief information on creative outcomes by novice and advanced students. 23rd *International Conference on Engineering Design (ICED21)*, Gothenburg, Sweden, 16-20 August. Cambridge University Press. Virtual, Online. Citations=3
- Casakin, H.,* & Georgiev, G. (2020). Design creativity and the semantic analysis approach: Teacher and student interactions. *The Sixth International Conference on Design Creativity (ICDC2020)*. Oulu, Finland, August 26 – 28. Virtual, Online.
- Hu, X., Georgiev, G., & Casakin, H. (2020). Mitigating Design Fixation with Evolving Extended Reality Technology: An Emerging Opportunity. *16th International Design Conference - DESIGN 2020*, October 26-29, Dubrovnik - Cavtat – Croatia. Cambridge University Press. Virtual, Online. Citations=8
- 14. **Casakin, H**.,* Koronis, G, & Silva, A. (2019). The Role of the Brief in Supporting Creative Ideation in the Design Studio: Quantitative Requirements and Visual Props.

IASDR. International Association of Societies of Design Research Conference. Manchester, UK, 2-5 September. **Citations=5**

- Georgiev, G., & Casakin, H. (2019). Semantic measures for enhancing creativity in design education. 22nd International Conference on Engineering Design (ICED19), Delft, The Netherlands, 5-8 August 2019. Cambridge University Press. Citations= 7
- Singh, A., Cascini, G., Casakin, H., & Singh, V. (2019). A Computational Framework for Exploring the Socio-Cognitive Features of Teams and their Influence on Design Outcomes. 22nd International Conference on Engineering Design (ICED19), Delft, The Netherlands, 5-8 August 2019. Cambridge University Press. Citations=9
- Casakin, H.,* Ruiz, C., & Hernandez, B. (2019). Apego al Barrio: El Caso de Israel (Attachment to the Neighborhood: The Case of Israel). XV *Congreso Internacional de Psicologia Ambiental -PSICAMB*. Tenerife, Spain, 16-19 July. (Extended abstract)
- Casakin, H.,* & Ginzburg, Y. (2018). The Whole-to-Part-to-Whole Method: Evolutionary and Integrative Design. *DRS Design Conference*. 25-28, Limerick, Ireland, June, 2018. Citations=2
- Singh, V., & Casakin, H. (2018). The use of analogy in design teams: steps towards a computational model and conceptual insights. *Design 2018*, Dubrovnik, Croacia, 21-24 May, 2018. Citations=4
- Casakin, H.,* (2017). Metaphorical language in an architectural design team. *Conference S.Arch 2017*. June 7-9. University of Hong Kong. (Selected for publication in the *International Journal of Contemporary Architecture - The New ARCH.*, 4, 62-70.)
- Casakin, H.,* & Singh, V. (2016). A Framework to study the multi-disciplinary profile of architectural design students. *Quality, Mobility, and Globalization in the Higher Education System A Comparative Look at the Challenges of Academic Teaching*. September 7-9, Ariel University.
- Singh, V., & Casakin, H. (2015) Developing a Computational Framework to Study the Effects of Use of Analogy in Design on Team Cohesion and Team Collaboration.
 20^h International Conference on Engineering Design (ICED15), Milano, Italy, 19-22 July 27-30 2015. Web of Science. Core Collection. Citations=6

- (b) Conference proceedings, running numbers
- 23. **Casakin, H**.,* & Timmeren van, A. (2014) Analogies as creative inspiration sources in the design studio: the teamwork. *Atiner 4th Annual International Conference on Architecture*, 7-10 July 2014, Athens, Greece. (Paper selected for publication in the *Athens Journal of Architecture*.)
- Goldschmidt, G., Casakin, H., Avidan, Y., & Ronen, O. (2014) Fun follows function or function follows fun? Three studio critiquing cultures. 10th Design Thinking Research Symposium Analyzing Design Review Conversations. 12-15 October, Purdue University, West Lafayette, Indiana. (Selected for publication in the book Analyzing Design Review Conversations. In S. Robin Adams & J. A. Siddiqui. Purdue Publishers)
- Casakin, H.,* & Kreitler, S. (2014) Meaning-based assessment of metaphors in Architectural design. *International Conference on Human Behavior in Design 2014*. 14-17 October, Ascona, Sweitzerland.
- 26. Casakin, H.,* & Badke-Schaub, P. (2014) Mental Models and Creativity in Engineering and Architectural Design Teams. *Sixth International Conference on Design Computing and Cognition (DCC'14)*. University College London, UK. 23-25 June. (Selected for publication in the book *Design Computing and Cognition '14*. In J.S. Gero, and S. Hanna. Springer International Publishing AG: Cham, pp. 155-171.)
- 27. Casakin, H.,* Timmeren van, A., & Badke-Schaub, P. (2013) Scenarios and Design Patterns in Design Education. *Proceedings of 10th International Conference on Contemporary Issues of Higher Education - The Ethos of the Academe: Standing the Test of Time*. Ariel University, Ariel, Israel. September 10-12 .pp. 38-58.
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• Synopsis of research, including reference to publications and grants in above lists

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1. General

I hold a B.A degree in Architecture and Town Planning from the University of Mar del Plata, Argentina in 1989. A year later I started the Master studies at the Technion – IIT, Haifa, Israel. In 1993 I obtained a M.Sc. in Architecture, and in 1998 a D.Sc. in Architecture from the Technion. During my studies in this institution, I earned an increased full scholarship for pursuing the M.Sc. and Ph.D. studies. I was also awarded the Leon Riskin Award for the M.Sc. thesis, and the Miriam and Gerhard Karplus Award for the D.Sc. thesis. In 1998 I was employed by the then Ariel University Center of Samaria, where I continued working as a Senior Lecturer and in 2014 as Assoc. Professor, till the present. In 1999 I earned a fellowship for postdoctoral studies at Hamburg University, Graduate School, Department of Cognitive Sciences, FB Informatik. From 2001 to 2005 I worked part time as a research fellow in the Laboratory of Cognitive and Environmental Studies (ESLab), Tel Aviv University. My professional experience includes appointments in the Faculty of Industrial Design Engineering, TUDelft, Delft University of Technology, Netherlands (2012), and the Faculty of Architecture, TUDelft, Delft University of Technology, Netherlands (2013), where I worked as research fellow during my Sabbatical leave. At present, I am engaged in teaching, research, and professional public activities.

2. Research activity

Since my last promotion, the publication of my research findings centered on the following three main interdisciplinary research areas:

Design Cognition and Design Creativity. This domain is concerned with how (i) designers think and behave during the problem-solving activity. My main research interest focuses on topics such as idea generation, team collaboration, mental models, visual reasoning, the use of metaphors, visual analogies, design scenarios, and design patterns as cognitive strategies for design problem solving. Moreover, how creativity is manifested in design, and what is its relation to the design process, the designer, and his or her outcomes. Recently, I was awarded the Israel Science Foundation (ISF) grant for the research proposal "How framing and reframing in design problem-solving affect the quality of solutions" for the years 2022-25. Framing and reframing (F-RF), a fundamental cognitive activity that occurs across all problem-solving fields, has been studied qualitatively in design and innovation. Frames are a set of grounded, co-activated concepts based on the knowledge, experience, and values of the problem-solver and largely affect how to view, represent, and construct problems and solutions. Despite F-RF's importance for design practice, current research is fragmented and incomplete, and methods for measuring F-RF empirically remains underexplored and unsystematic. This project investigates *F*-*RF* and its relationship with the quality of the design solutions by applying a newly developed quantitative method based on first occurrences of concepts that employs the Function-Behavior-Structure (FBS) ontology for systematically measuring F-RF. Its primary contribution is the exploration of the relationship between F-RF behavior and design solutions, thereby laying the foundation for future interventions to improve innovation and related problem-solving.

The question of how individual features affect the development of design expertise is a central underdeveloped topic in the design literature. While some works acknowledged the importance of design abilities and creative ideation for design expertise, there is no theoretical framework that explicates their relationships and supports it empirically. In this regard, Casakin and Levy (2021) proposed a conceptual model and examines these

relationships while integrating temporal experience as a moderating factor. As a result, the work allowed a better understanding about the input of design ability, creative ideation, and temporal experience to design expertise.

Metaphor is a fundamental heuristic supporting cognitive and communicative requirements in design. This reasoning mechanism helps structure how architects reason about problems, and how they approach design situations from novel perspectives. Casakin (2017; 2019) investigated empirically the use of metaphors during the conceptual front edge design, known as the most creative stage of the process. Emerging metaphorical expressions generated during communication interactions maintained by architects were identified and examined based on protocol analysis approach. Metaphors were further categorized according to main experiential domains at different levels of detail, as well as in terms of image and conceptual descriptions. The study contributed to gain a deeper insight into the rhetorical potential of metaphor during design problem solving, and to strengthen its centrality in architecture. Based on the Meaning Theory, Casakin and Kreitler (2017) investigated the role of the meaning-based assessment of metaphors in design. The study identified components of the meaning profiles of metaphors and their interrelations. A major contribution was to identify cognitive contents and processes of these constructs as best predictors of design performance aided by metaphors.

Design patterns and developing scenarios are two additional tools aimed at enhancing design problem-solving. Studying the use of urban design patterns (Casakin, 2018) together with design scenarios (Casakin, van Timmeren, and Badke-Schaub, 2016) enabled to understand their singular roles in the design process, and their effect on the creativity and functionality of the design outcomes. These projects contributed to gain a better insight into what are the main task-related activities derived from the use of design patterns and scenarios, and to show how they can aid urban design in practice.

The dynamics of design teams is a topic that plays a critical role in product development, mostly in the early phases of the process, which deserves further investigation. A series of studies centered on design team collaboration. They developed conceptual frameworks of computational models about how cognitive and social features of design teams affect the quality of the produced outcomes (Singh and Casakin, 2018; Singh et al., 2019). The framework was based on key cognitive and social theories grounded in literature. Agent-Based Modelling (ABM) was used as a tool to evaluate the impact of design process organization and team dynamics on the design outcome. Other studies investigated the role of mental models in the coordination of team activities during design problem-solving. They centered on the sharedness of mental models between architects and clients (Casakin and Badke-Schaub, 2017). They contributed to understand how coordination and sharedness among team members, can support design activities related to the task mental model and the generation of new ideas. In a study that compared multi- with mono-disciplinary design teams, Casakin and Cascini (2022; To appear) investigated the quality of interactions among members from a social and task-related perspective. Multi-disciplinary teamwork was found to enable a comprehensive understanding of the design task. This requires skills and competences different than those of mono-disciplinary teams, what challenges team dynamics and collaboration. The work unveiled critical issues for extending the frontiers of design practice and education.

(ii) <u>Design Education</u>. The focus in this research area is on design studio pedagogy – mainly the architectural studio, and the study of student-teacher interactions during the design critique. My research examines issues such as how design students acquire knowledge and skills, and how the use of novel pedagogic approaches contributes to improve

critical abilities in the studio, as well as the development of design expertise. A recent research project dealt with a systematic review of creativity in the architectural design studio (Casakin and Wodehouse, 2021). A main contribution to the design education literature was the identification of critical issues and directions for nurturing and developing creativity in the studio environment. Another project dealt with crafting briefs as a design aid in the studio. It explored ways in which briefs can be structured to better support the production of novel and useful outcomes of design students. Accordingly, the influence of briefs with different types of text and visual stimuli as well as representations at different level of abstraction were explored. The outcome of this project are papers published in high quality journals and conferences (Casakin, Koronis, and Silva, 2019; 2022; Koronis, Casakin, and Silva, 2021a; 2021b; Koronis, Casakin, Silva, and Siang, 2021), which contributed to the design education and creativity literatures.

A semantic analysis approach was employed to explore the semantic content of communication and information exchange between students and instructors (Georgiev and Casakin, 2019; Casakin and Georgiev, 2020; 2021). Results showed that semantic similarity and information content were the most prolific semantic measures, and therefore should be considered for promoting creativity in the design studio. The analysis of conversations during the design activity contributes to facilitate deeper insights into design thinking and its relation to creativity. Findings are also relevant for design studio activities using support tools such as automated systems. Latent semantic analysis approach was also employed to explore emergent thematic patterns concerned with expertise in design (Casakin and Singh, 2019). The major contribution of the study was to offer a structured assessment of design literature that enabled to gain a clearer and comprehensive understanding of the key thematic patterns in the discussion on design expertise, with implications for design education.

Further projects focused on the use of evolving extended virtual reality technology for the mitigation of design fixation (Hu, Georgiev, and Casakin, 2020); and the use of Immersive Virtual Reality (iVR) and non-immersive environments in the design studio (Sopher, Casakin, Gero, 2022). iVR systems form a representational medium for student-tutor collaboration in studio crits through a shared presence in a life scale display of the design, what makes them appropriate for design crits. The iVR was found to support a higher frequency of solution-focused issues generated by the student and to maintain a lower Problem-Solution Index for the student than for the tutor. It also showed to support learning centered pedagogy, with more student engagement and more student generation of design issues and transitions. These studies served as an empirical foundation for further research on the effects of deploying iVR technology in the design studio.

Prototyping physical artifacts is a fundamental activity for both product development in industrial and design domains, and the development of digital fabrication and creativity skills. This was reflected by a recent systematic review by Soomro, Casakin, and Georgiev (2022) carried out on the topic. Prototyping is also essential for human-centric problem-solving in design education. Due to the spread of makerspaces like fabrication laboratories (FabLabs) around the world, the use of digital fabrication tools for prototyping in educational institutes is becoming increasingly common. Consequently, a conceptual framework for sustainable prototyping in makerspaces based on a five-stage design thinking model was proposed (Soomro, Casakin, and Georgiev, 2021). A main contribution of this investigation is an empirically tested design approach - supported by a comprehensive literature review of social, economic, and environmental sustainability factors of digital fabrication. The approach can be applied to evaluate prototyping processes in FabLabs in education contexts aimed at enhancing design sustainability. Not much is known about students' thoughts and

beliefs regarding learning experiences while working in design activities in FabLabs. Therefore, another study investigated self-perceptions on learning in these environments (Georgiev et al., 2022). These included aspects such as skills, confidence, motivation, enjoyment, and their relationship to the use of 2D and 3D tools and devices in digital fabrication. Important pedagogical considerations for future interventions in FabLabs were proposed, such as ways to increase students' motivation and their skill development.

(iii) Design and Environmental Psychology. The domain centers on human-environment interactions from a socio-psychological perspective. My major themes of interest are transcultural studies in place attachment, place identity, and the design of physical environments such as the urban public place. I investigated people's place attachment by means of the psychological elements of affect, cognition, and behavior (Casakin, Ruiz, and Hernandez, 2019; 2022). Findings contributed to enhancing understanding of the processes of place attachment in general, and in the neighborhood in particular. Moreover, I examined differences between the traditional and the renewed kibbutz in terms of place attachment, life satisfaction, and residential satisfaction (Casakin & Reizer, 2016a; 2022). These studies contributed to explain how the transformational changes of the kibbutz affected the perception and emotional ties of their members, as well as their environmental uncertainty (Casakin & Reizer, 2016b). Additional recent projects are on the study of the public space of the urban environment as a complex system (Casakin and Valera, 2021; Valera and Casakin, 2022). Public space is the part of the urban environment where interactions between people develop freely within a social context. Environmental psychology and architectural and urban design view the public space as a complex ecosystem network. We integrated systematic observation and social network analysis as an innovative empirical approach to deal with the intricacies of the urban space. We showed that Social Network Analysis is an efficient and practical tool for identifying predominant patterns of use, and for describing, exploring, and understanding the socio-spatial dynamics of the urban public realm. The studies demonstrated that the availability of structured data represented by visual patterns have important implications in support of architectural and urban design.

The result of my research activity was the publication of more than 150 papers in leading international peer reviewed journals, international conference proceedings, and book chapters. Part of these were written in collaboration with authors from cognitive sciences, social psychology, education, design engineering, mechanical engineering, industrial design, linguistics, computer sciences, and geography. In 85 % of the papers, I was the first or single author. The outcome of my research was presented in more than 100 international conferences, seminars and invited lectures.

My papers have been cited more than 3000 times (H-index: 28), based upon Google Scholar citation index (see vitae). In 2022 <u>I earned the Israel Science Foundation (ISF) grant</u> for the research proposal "How framing and reframing in design problem-solving affect the quality of solutions" for a period of three years. In 2018, I received the award "Top 1% of Reviewers in Cross-Field Category" awarded by Publons Global Peer Review Awards, Web of Science Group. In 2017, I was awarded the "Outstanding Contribution in Reviewing in 2017" by Elsevier and Design Studies. In 2012 I received the Excellency in Research Award by Ariel University.

In sum, my research in recent years focused on exploring in depth the manifestations, processes and outcomes of design creativity. It also explored the use of tools and environments as an aid in design problem-solving, and student-teacher interactions in the studio. The emergence of makerspaces and FabLabs as main environments for supporting design and prototyping activities was another main research topic. Findings contributed to

the shaping of new domains of conceptualization for the understanding, promotion and education of design. I also investigated the dynamics and performance of multi-disciplinary design teams. The projects contributed to introduce a new approach to analyze design team quality, team interaction and communication, and team mental models. Further studies dealt with the interactions and emotional relations between people and their environments from the cultural-socio-psychological perspectives. I integrated empirical approaches in novel ways to deal with the complexities of the urban space. The outcomes contributed to gain a deeper insight into the topic in different populations and physical scales.

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