

YORAM REICH, PhD, FINCOSE, FDRS, FDS, HF INCOSE-IL
Chaired Professor of Engineering Design and Systems Engineering

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A. EDUCATION

1974-1976 Bar-Ilan University, Ramat-Gan, Israel
Computer Science and Mathematics (while in high school)
External student, no degree awarded

1980 Tel-Aviv University, Tel-Aviv, Israel
B.Sc. (Summa-Cum-Laude) Mechanical Engineering, Graduated first in class.

1984 Tel-Aviv University, Tel-Aviv, Israel
M.Sc. (Magna-Cum-Laude), Mechanical Engineering,
Thesis title: *Weight optimization of trusses, subjected to multiple loading conditions, using explicit optimum design*, (in Hebrew). Thesis supervisor: Prof. Moshe B. Fuchs

1991 Carnegie Mellon University, Pittsburgh, PA.
Ph.D. Civil Engineering
Thesis title: *Building and Improving Design Systems: A Machine Learning Approach*.
(Available as Technical Report EDRC 02-16-91). Thesis supervisor: Prof. Steven J. Fenves

B. ACADEMIC AND PROFESSIONAL EXPERIENCE

1978-1980 COMUS LTD (Manufacturer of Hi-End, Hi-Fi Stereo Equipment), Tel-Aviv, Israel
Designer. Designed and produced a high-quality turntable.

1979-1980 Tel-Aviv University, Tel-Aviv, Israel
Research Assistant in the Department of Fluid Mechanics.

1980-1985 IDF, Israel
Staff Engineer, Naval Architecture Branch.

1985-1986 IDF, Israel
Head of Research and Computer-Aided Design Office. Founded and established a new office for advancing the state of computerized design and analysis in naval architecture.

1986-1991 Carnegie Mellon University, Pittsburgh, PA.
Research Assistant, Engineering Design Research Center.

1987-1991 Self-employed, USA
Consultant, Marine structures engineering.

1991-1993 Carnegie Mellon University, Pittsburgh, PA.
Visiting Research Associate, Engineering Design Research Center.

1992-1993 Duke University, Durham, NC.
Visiting Scholar, Department of Civil and Environmental Engineering. (In parallel to CMU appointment.)

1993-1997 Tel Aviv University, Tel Aviv, Israel
Senior Lecturer, Department of Solid Mechanics, Materials, and Structures, Faculty of Engineering.

Summer Visiting Scholar, Department of Civil and Environmental Engineering, Duke University and
1995,1996 Engineering Design Research Center, Carnegie Mellon University.

Summer Visiting Scholar, Institute for Complex Engineering Systems, Carnegie Mellon University.
1997

1998-2007 Tel Aviv University, Tel Aviv, Israel
 Associate Professor, School of Mechanical Engineering, Faculty of Engineering.

2004-2005 Visiting Professor, Center for Design Research, Stanford University.

2007- Tel Aviv University, Tel Aviv, Israel
 Full Professor, School of Mechanical Engineering, Faculty of Engineering.

C. ACADEMIC AND PROFESSIONAL AWARDS

C.1.1. INTERNAL RESEARCH GRANTS (AT TAU)

1994 Fleischman Foundation, PI, Collaborative design support systems (\$13,000).

1995 Fleischman Foundation, PI, Knowledge extraction from engineering databases (\$2,000).

1995 Tel Aviv University Research Fund, PI, Capturing design rationale by an artifact-centered representation (\$4,000).

1997 Fleischman Foundation, PI, Knowledge extraction from engineering databases (\$2,000)

1997 Tel Aviv University Research Fund, PI, Capturing design rationale by an artifact-centered representation (\$3,500).

1999 Fleischman Foundation, Co-PI, MEMSIS - A MEMS Information System (\$16,000).

2006 Tel Aviv University Research Fund, PI (5,450 NIS).

2007 Tel Aviv University Research Fund, PI (20,000 NIS).

2013 Tel Aviv University Research Fund, PI (19,000 NIS).

2019 The Shlomo Shmeltzer Institute for Smart Transportation in Tel-Aviv University, PI (40,000 NIS).

C.1.2. EXTERNAL RESEARCH GRANTS

1994-1996 Israeli Ministry of Science and the Arts, PI, Knowledge extraction from engineering databases (\$30,000).

2001 VATAT, PI, Internet course development (10,000 NIS).

2002-2003 MAGNET, PI, Knowledge-Based Reverse Engineering (343,000 NIS).
 Israeli Aircraft Industry, PI, Knowledge-Based Reverse Engineering (78,000 NIS).

2002-2003 PTC, PI, CAD PhD Fellowship (48,000 NIS)

2008-2012 Israel Science Foundation, PI, Managing dynamic product development processes by simulating them with formal method for process scheme modeling (369,000 NIS).

2010-2011 MINES ParisTech, Design theory and methods for innovations, with Offer Shai (10,000 Euro).

2010-2013 EU 7th Framework Program, Coordinator, PI, Architecting systems and manufacturing organizations for adaptability (2,500,000 Euro).

2014-2018 Israel Science Foundation, PI, Computational support for scientific discovery of engineering knowledge (816,000 NIS).

2014-2016 MAFAT, Co-PI, Development of a generic tool for exploring multi objective design space and its demonstration on UAV propellers (PI Amiram Moshaiov) (400,000 NIS).

2014-2015 MAFAT, PI, Biomimetic Underwater Vehicle Drag Reduction, (Co-PIs Amiram Moshaiov, Moshe Rosenfeld) (200,000 NIS).

2014-2015 MAFAT, Co-PI, Multi-Objective Aeronautic Games, (PI Amiram Moshaiov) (200,000 NIS).

2016-2018 Ministry of Science, PI, Developing new topologies of parallel robots and characterizing

their singularities (480,000 NIS)

2018-2019 Office of the Prime Minister, PI, Support for participating in Formula Car competitions (200,000 NIS)

2019-2022 Pazy, PI, Architecting complex systems by top-down requirements analysis and bottom-up model-based system engineering (1,400,000 NIS)

2019-2020 MAFAT, PI, Architecting cloud-edge systems (600,000 NIS)

2021-2022 MAFAT, PI, Systems Engineering 2050 (750,000 NIS)

2024-2025 MAFAT, PI, Systems Engineering 2050 (1,200,000 NIS)

C.2 FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

1978 University Rector Award, Tel-Aviv University

1979 University Rector Award, Tel-Aviv University

1986-1987 Fulbright Fellowship

1986-1987 Rothschild Fellowship

1987-1991 Graduate student scholarship, Engineering Design Research Center, Carnegie Mellon University

2009 **Outstanding paper award**, ICED'09 – highest review score out of 379 papers

2011 **Reviewers' favorite award**, ICED'11 – highest review score out of 416 papers

2014 Elected **Fellow**, Design Research Society

2021 Elected **Honorary Fellow**, INCOSE IL – The Israeli Society for Systems Engineering

2021 **Best paper of 2019**, *Systems Engineering* Journal

2022 **Journal's outstanding paper of 2021**, *Systems Engineering* Journal

2022 **Best paper award**, Gazit Annual Conference

2023 **Chair in Engineering Design and Systems Engineering**

2023 Elected **Fellow**, Design Society

2025 Tel Aviv University Rector's Award for Innovation and Creativity in Teaching for 2025

2026 Elected **Fellow**, International Council on Systems Engineering (INCOSE)

D. MEMBERSHIP IN PROFESSIONAL SOCIETIES

2001 The Design Society, Fellow

2007 International Council on Systems Engineering (INCOSE), Fellow

2013 Design Research Society, Fellow

E. REVIEWER AND OTHER PROFESSIONAL RESPONSIBILITIES

E.1. SCIENTIFIC JOURNAL-RELATED ACTIVITIES

1991-2011 **Member of the editorial board** of the journal *Advanced Engineering Informatics* (previously known as *Artificial Intelligence in Engineering*)

1991- Occasional reviewer for the following journals (partial list):
Advanced Engineering Informatics (formerly, *Artificial Intelligence in Engineering*)
Applied Artificial Intelligence: An International Journal
Applied Science
Artificial Intelligence in Engineering, Design, Analysis, and Manufacturing
ASCE Journal of Computing in Civil Engineering
ASCE Journal of Engineering Mechanics

ASCE Journal of Infrastructure Engineering
ASME & ACM Journal of Computing & Information Science in Engineering
ASME Journal of Dynamic Systems, Measurement and Control
ASME Journal of Mechanical Design
Computer-Aided Design
Design Studies
IEEE Expert
IEEE Systems
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Systems Man and Cybernetics
IEEE Transactions on Evolutionary Computation
IEEE Transactions on Engineering Management
Information Sciences
International Journal of Engineering Education
International Journal of Product Life Cycle Management
International Journal of Production Research
Journal of AI Research (JAIR)
Journal of Design Research
Journal of Engineering Design
Knowledge Acquisition (now the International Journal of Human-Computer Studies)
Machine Learning
Microcomputers in Civil Engineering
Research in Engineering Design
Reviews in Chemical Engineering
Structural Engineering and Mechanics: An International Journal
Systems

1995-1999 **Member of the editorial board** of the journal *Applied Ocean Research*
1998-2002 **Associate Editor**, *Journal of Computing in Civil Engineering, ASCE*
2003- **Member of the editorial board** of the *International Journal of Mass Customization*
2005-2008 **Member of the advisory board** of the journal *Research in Engineering Design*
2007- **Member of the editorial board** of the *Journal of Engineering Design*
2007- **Member of the scientific council** of the *International Journal on Sciences of Industrial and Systems Engineering and Management*
2007- **Member of the editorial board** of *Advances in Enterprise Systems (AES)*
2007-2009 **Co-Chair, Design Society Special Interest Group** on Design Research Methodology
2008-2014 **Co-Founder, Co-Chair, Design Society Special Interest Group** on Design Theory
2008-2009 **Co-Editor in-Chief** of the journal *Research in Engineering Design*
2010-2025 **Editor in Chief** of the journal *Research in Engineering Design*
2012- **Member of the editorial board** of *SDPS Transactions: Journal of Integrated Design & Process Science (JIDPS)*
2013- **Member of the editorial board** of the *International Journal of Design Creativity and Innovation*
2014- **Associate Editor** of the journal *Design Science*, as of 2022, **Senior Editor**
2020- **Member of the editorial board** of the journal *Systems*

E.2. CONFERENCE-RELATED ACTIVITIES

1992- Reviewer for various conferences, including:

Banff Knowledge Acquisition Workshop (Banff, 1992)

CAAD Futures 93 (Pittsburgh, PA, 1993)—member of the international review committee, AI in Design (Zurich, 1994)

Machine Learning Workshop at AI in Design (Zurich, 1994; Stanford, 1996; Rochester, 2000)

Machine Learning Workshop at IJCAI'95 (Montreal, 1995)

ASME Design Theory and Methodology (1997, 1998, 1999, 2003, 2004, 2005, 2006, 2007, ...)

ICED (2001, 2003, 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2021, 2023)

International Conference on Design Computing and Cognition (2004, 2006)

ASME Conference on Engineering Systems Design and Analysis (2004)

International Design Conference (2006)

Seventh International Symposium on Tools and Methods of Competitive Engineering (TMCE 2008)

1996- Acted as a member of the international advisory board/scientific committee/program committee of various international conferences, including (**showing some of the conferences**):

- The Conference on Information Technology in Civil and Structural Engineering Design – Taking Stock and Future Directions, (Glasgow, 1996)
- Artificial Intelligence in Design, (Stanford, 1996)
- ASCE Computing Congress (Boston, 1998)
- ECAI'98 Workshop on Binding Environmental Sciences and Artificial Intelligence (Brighton, 1998)
- AID'98 Workshops on Machine Learning and Research Methods in AID Research (Lisbon, 1998)
- International Conference on Computer Applications and Information Technology in the Maritime Industry (COMPIT, Potsdam, 2000)
- Artificial Intelligence in Design (Rochester, 2000)
- International Conference on Engineering Design (ICED, Glasgow, 2001)
- Third International Workshop on Strategic Knowledge and Concept Formation (SKCF'01, Sydney, 2001)
- 2nd International EuroConference on Computer Applications and Information Technology in the Maritime Industries (COMPIT' 2002, Rome, 2002)
- International Conference on Advances in Civil Engineering (ACE2002, Kharagpur, 2002)
- Artificial Intelligence in Design (Cambridge, 2002); AID'02 Workshop on Learning and Creativity (Cambridge, 2002)
- AID'02 Workshop on Cognitive and Computational Models in Design Teaching (Cambridge, 2002)
- International Conference on Engineering Design (ICED, Stockholm, 2003)
- IMAGO In Israel – 10th anniversary (Israel, 2003)
- International Conference on Computer Applications and Information Technology in the Maritime Industry (COMPIT, Siguenza, 2004)
- 9th International Design Conference (DESIGN 2006, Dubrovnik)
- INCOSE/IEEE International Conference on Systems Engineering and Modeling (ICSEM'07, 2007, Herzliya and Haifa, Israel)
- International Conference on Engineering Design (ICED, Paris, 2007)
- The 2008 Israel-Germany Bi-National Symposium on Knowledge-based Integrative Product Development and Manufacturing (Israel, 2008)
- 10th International Design Conference (DESIGN 2008, Dubrovnik)

6th Seminar and Workshop on Engineering Design in Integrated Product Development (EDIProD'2008, Gdynia, Poland, 2008)

Realising Network Enabled Capability Conference, Leeds, UK, 2008

International Conference on Research into Design (ICoRD'09, Bangalore, India, 2009)

5th Annual Israeli National Conference on Systems Engineering (INCOSE-IL 2009, Herzliya and Haifa)

17th International Conference on Engineering Design (ICED09, 2009, Stanford).

11th International Design Conference (DESIGN2010, 2010, Dubrovnik)

International Conference on Research into Design (ICoRD'11, Bangalore, India, 2011)

12th International Design Conference (DESIGN2012, 2012, Dubrovnik)

2nd International Conference on Design Creativity (ICDC), Glasgow, UK, 2012

22nd CIRP Design Conference, Bangalore, India, 2012

XVIII International Conference on Industrial Engineering and Operations Management (ICIEOM 2012, Guimarães, Portugal, 2012)

Australasian Conference on Innovative Technologies in Construction: 'From BIM to Beyond' – (Wuhan, China, 2012)

7th Annual Israeli National Conference on Systems Engineering (INCOSE-IL, Herzliya, 2013)

3rd International Conference on Design Creativity (ICDC), 2013

5th International Congress of the International Association of Societies of Design Research (IASDR), Tokyo, 2013)

19th International Conference on Engineering Design (ICED13, Seoul)

13th International Design Conference (DESIGN2014, 2014, Dubrovnik)

4th International Conference on Design Creativity (ICDC), 2014

International Conference on Research into Design (ICoRD'15, Bangalore, India, 2015)

33rd Israeli Conference on Mechanical Engineering (ICME 2015), Tel Aviv, 2015

International Association of Society of Design Research Congress, IASDR, 2015

The 55th Israel Annual Conference on Aerospace Sciences, IACAS, 2015

20th International Conference on Engineering Design (ICED15, Milan)

IASDR15, November, Brisbane, Australia

14th International Design Conference (DESIGN2016, 2016, Dubrovnik)

International Conference on Research into Design (ICoRD'17, Guwahati, India, 2017)

CIO-ICIEOM-IIE-AIM International Joint Conference (IJC2016)

34th Israeli Conference on Mechanical Engineering (ICME 2016), Haifa, 2016

21st International Conference on Engineering Design (ICED17, Vancouver), 2017

28th CIRP Design Conference, Nantes, France, 2018.

15th International Design Conference (DESIGN2018, 2018, Dubrovnik)

International Conference on Research into Design (ICoRD'19, Bangalore, India, 2017)

29th CIRP Design Conference, Povoa de Varzim, Portugal, 2019

22nd International Conference on Engineering Design (ICED19, Delft), 2019

16th International Design Conference (DESIGN2020, 2020, Dubrovnik)

23rd International Conference on Engineering Design (ICED21, Chalmers), 2021

CIRP Design Conference, Sydney, 2023

24th International Conference on Engineering Design (ICED23, Bordeaux), 2023

CIRP Design Conference, Sydney, 2024

18th International Design Conference (DESIGN2024, 2024, Dubrovnik)
 CIRP Design Conference, Sydney, 2024
 25th International Conference on Engineering Design (ICED25, Dallas), 2025

2004, 2006, **Vice Chair**, First International Conference on Design Computing and Cognition,
 2008, 2010, MIT, Boston, MA; Second International Conference on Design Computing and Cognition,
 2014, 2016, Eindhoven, The Netherlands; Third International Conference on Design Computing and
 2018, 2020, Cognition, Atlanta, US; Fourth International Conference on Design Computing and
 2022, 2024 Cognition, Stuttgart, Germany; Sixth International Conference on Design Computing and
 Cognition, London, UK; Seventh International Conference on Design Computing and
 Cognition, Evanston, US, Eight International Conference on Design Computing and
 Cognition, Como, Italy, Ninth International Conference on Design Computing and
 Cognition, Atlanta, US, Tenth International Conference on Design Computing and
 Cognition, Glasgow, UK, Eleventh International Conference on Design Computing and
 Cognition, Concordia, CA

2008 **Co-Chair**, Open day, the 2008 Israel-Germany Bi-National Conference on
 Knowledge-based Integrative Product Development and Manufacturing, Tel Aviv

2009 **Program Chair**, Model-Based Systems Engineering (MBSE'09, Herzliya and Haifa)

2009, 2011, **Topic Chair**, Design theory and research methodology, 17th International Conference on
 2013 Engineering Design (ICED09, Stanford), 18th International Conference on Engineering
 Design (ICED11, Copenhagen), 19th International Conference on Engineering Design
 (ICED13, Seoul)

2014 **Conference co-chair**, The First Biomimicry Conference – Academy & Industry, October,
 Herzlia

2015 **Conference co-chair**, The Second Biomimicry Conference – Academy & Industry,
 November, Tel Aviv

2017 **Conference co-chair**, The Third Biomimicry Conference – Academy & Industry, June, Tel
 Aviv

2021 **Conference chair**, 11th Israeli International Conference on Systems Engineering of
 INCOSE-IL, March, online, Israel

E.3. MISC. ACADEMIC ACTIVITIES

1994-1998 Member, Computer Committee, Faculty of Engineering

1994-2001 Chairman, Graphics Committee, Faculty of Engineering

1995- Examiner of MSc. and PhD. theses in other departments or institutions in Israel
 (e.g., Industrial Engineering, TAU; Civil, Mechanical, and Industrial Engineering, and
 Architecture, Technion; Department of Mathematics, Haifa U; Business Administration,
 Bar Ilan U; Industrial Engineering, BGU) and abroad (e.g., Mechanical Engineering,
 Australia, France)

1996- Reviewers of research proposals (e.g., Israel Science Foundation, Germany-Israeli
 Foundation, BSF, Technion, Haifa University, Ort Braude College, NSF – US, Hong Kong,
 The Netherlands)

1996 Member of the committee of the Council for Higher Education to examine an
 undergraduate program on Information Systems in Shenkar

1996-1998 Representative of Senior Lecturers in the Faculty Council

1996- Participation in the promotion process of faculty members at Tel Aviv University, Ben-
 Gurion University, and the Technion

1998-2001, Member, Mechanical Engineering Curriculum Committee, Faculty of Engineering

2015-2020

1998-1999 Member, Committee for Student Academic Affairs, Faculty of Engineering

1999-2000 Member, Ad-hoc Committee for planning the future of the Faculty of Engineering

1999-2002 Reviewer for the Council for Higher Education of several graduate and undergraduate programs in Israeli universities

2001 Co-Founder, Computational Systems Laboratory

2002-2004 Member, Committee for Student Academic Affairs, Faculty of Engineering

2002-2004, Director, Computational Systems Laboratory

2005-2011

2006-2010 Member, PhD students committee, Faculty of Engineering

2007-2009 Member of the committee of the Council for Higher Education to examine a proposal of Ort Braude College to offer a graduate program in Systems Engineering

2007-2008 Representative of Tel Aviv University, School of Mechanical Engineering in the Israeli Society of Mechanical Engineers

2008-2009 Member of a committee of the Council for Higher Education to examine a proposal of Afeka College to offer a graduate program in Systems Engineering

2009-2021 **Elected Member**, Advisory Board of the Design Society (re-elected for a second term)

2010-2014 Member, Admission Committee of undergraduate studies, Faculty of Engineering

2010-2015 **Elected Member**, Appointment Committee, Faculty of Engineering (reelected 2012)

2011-2016 **Elected Member**, Senate, Tel Aviv University

2011- **Appointed Member**, Higher Academic Council Member, Holon Institute of Technology

2012- **Appointed Member**, Institute Appointment Committee, Holon Institute of Technology

2012- Mentor, Engineering Without Borders, Tel Aviv University Chapter

2012-2016 **Elected Member**, Board of Governors, Tel Aviv University (re-elected 2015)

2014-2020 **Co-Founder and Head, Biomimicry Laboratory**, Porter School for Environmental Studies, Tel Aviv University

2017- **Co-Founder and Head, Systems Engineering Research Initiative (TAU-SERI)**, Tel Aviv University

2018-2022 **Elected Member**, Senate, Tel Aviv University

2018-2021 **Elected Member**, Board of Governors, Tel Aviv University

2019- **Head, MSc Program in Systems Engineering**, Tel Aviv University

2022-2024 **Elected Member**, Board of Governors, Tel Aviv University

2023-2026 University Appointment Committee, Tel Aviv University

2024-2026 **Elected Member**, Board of Governors, Tel Aviv University

E.4. INDUSTRY-RELATED ACTIVITIES

1996-2000 Member of the executive board of SME Israel.

1997 Organized a communication and information management workshop in distributed R&D organizations, Tel Aviv, Israel, Nov. 1997.

1997-2001 Organized a professional club for Knowledge and Data Management.

1998 Co-organized the 26th WEGEMT school (a one-week training program of the European Commission) on Expert Systems for Marine Applications, Hamburg, Germany, March 1998.

1998-1999 Chairman, SME Israel Chapter (319).

1999 Chair, The 16th Conference on Advanced Technologies in Engineering, Management, and Manufacturing, SME.

2007 Consulting for the Rural Airlink Project, India, IIT Bombay, India.

2011-2021 **Co-Founder and President**, Israel Institute for Empowering Ingenuity.

F. SUPERVISION

F.1. POST-DOCTORAL FELLOWS' SUPERVISION

1997-1998 Dr. Sudhirkumar Barai, *Applications of machine learning to civil engineering*

F.2. DOCTORAL STUDENTS' SUPERVISION

- 2004 Adi Kapeliuk, Thesis topic: *A Framework for Organizing the Space of Decision Support Systems with Application to Solving Subjective, Context Dependent Problems*
- 2006 Amir Ziv Av, Thesis topic: *Generating Optimal Concepts and Robust Concepts with Emphasis on Mechanical Systems*
- 2007 Eli Kolberg (with Prof. Ilya Levin), Thesis topic: *Design Methodology for Mechatronics Systems*
- 2009 Arie Karniel, Thesis topic: Controlling a dynamic process-scheme model of the product development process (PDP)
- 2015 Yael Helfman-Cohen, Thesis topic: Biomimetic design method for innovation and sustainability
- 2016 Miri Sitton, Thesis topic: EPIC- Enterprise system engineering framework
- 2017 Ofer Dor, Thesis topic: Induction from vector-based data and knowledge
- 2017 Yaakov Shabi, Thesis topic: Developing a decision support analytical model for planning the verification, validation & testing (VVT) process
- 2020 Avi Shaked, Thesis topic: PROVE: A framework for development process design
- 2015- Yaron Hakuk, Thesis topic: Computational support for scientific discovery
- 2022 Michael Slavutin, Thesis topic: Singularity of parallel platforms
- 2024 Emilia Lavi, Thesis topic: Value-oriented design: Framework, model and method
- 2025 Rani Lefler, Thesis topic: Systems engineering for managing socially involved environmental projects
- 2025 Shlomi Efrati, Thesis topic: Advancing centrality measures for complex engineering systems: A graph-theoretical approach to monolayer and multilayer network analysis
- 2021- Uriel Hochmann, Thesis topic: Emergence Design in Systems of Systems
- 2021- Tamar Mordel, Thesis topic: Mediation in systems engineering conflicts
- 2022- Doron Tzur, Thesis topic: Designing design education
- 2024- Jordan Peer, Thesis topic: Antifragility of systems engineering

F.3. MASTER STUDENTS' SUPERVISION

- 1993 Tung-Ying Shieh, M.Sc. Civil Engineering, Duke University, Thesis topic: *The potential of machine learning techniques for improving decision algorithms in groundwater contaminant transport modeling* (with Prof. M. Medina, internal supervisor)
- 1995 Tal Grinholz, M.Sc. Project topic: *Assessment of geometric interference in sheet metal bending*.
- 1996 Avi Maixner, M.Sc. Project topic: *Knowledge extraction from manufacturing data by machine learning and statistical methods*.
- 1998 Lior Cohen, M.Sc. Project topic: *Evaluating the k-DN learning algorithm*.
- 1999 Yaron Bar-Tal, M.Sc. Project topic: *Selecting a PDM system based on organization needs and system functionality*.
- 2000 Gabriel Dobrescu, M.Sc. Thesis topic: *Product family design through concurrent common platform generation and modular variants standardization*.
- 2000 Saul Szulanski, M.Sc. Thesis topic: *A parametric design driven model for product data management in a distributed concurrent engineering environment*.

2002 Eyal Levi, M.Sc. Thesis topic: *Software Quality Function Deployment: A tool in the software industry.*

2002 Eyal Herman, M.Sc. Project topic: *Outsourcing Product Design.*

2003 Ariel Schor, M.Sc. Thesis topic: *Incorporating sources' reliability in engineering decision problems.*

2003 Amir Paz, M.Sc. Thesis topic: *Tradeoff between customer requirement reliability and product quality in new product design.*

2003 Tal Pechter, M.Sc. Thesis topic: *A method for finding the structure and parameters of systems.*

2003 Yuval Sered, M.Sc. Thesis topic: *Focusing engineering effort in standardization and modularization of product platform components.*

2003 Gil Chen, M.Sc. Thesis topic: *A conversational case-based reasoning help-desk utility for complex products.*

2005 Chen Gingold, M.Sc. Thesis topic: *A simple and effective learning styles identification method for use in learner-types oriented asynchronous e-learning.*

2005 Avi Shaul, M.Sc. Thesis topic: *Technologies group platform for product life cycle.*

2007 Liad Weissman, M.Sc. Project topic: *From problem statement to SOS models: bridging the theory-practice gap.*

2008 Ran Beit On, M.Sc. Project topic: *Integrating resources with product concept generation.*

2009 Roni Ben Zion, M.Sc. Project topic: *Practical example of integrating conceptual design tools.*

2009 Roy Gery, M.Sc. Project topic: *Making concept generation with SOS more robust.*

2009 Arye Koifman, M.Sc. Project topic: *Implementing Assumption-Promises Database for Supporting APSOS Integration.*

2010 Mark Silverman, M.Sc. Project topic: *A method for forecasting the complexity of future design changes.*

2010 Shlomo Mitrani, M.Sc. Project topic: *Product development using Assumption-promises method.*

2010 Anton Taslitsky, M.Sc. Project topic: *Effective dynamic balancing of compressors.*

2011 Assaf Deutsch, M.Sc. Thesis topic: *Translating between PLM models.*

2011 Vladimir Saponar, M.Sc. Project topic: *Historical analysis of the development of beam bending using C-K theory.*

2011 Michal Shwarzberg, M.Sc. Project topic: *Conceptual design of an engine.*

2011 Morag Werthaim, M.Sc. Project topic: *Implementation of visual route card in production line of executive airplanes in Israel Aircraft Industry.*

2012 Tal Yahav, M.Sc. Project topic: *A method and software for creating consistent HOQ diagram.*

2012 David Rosenstein, M.Sc. Thesis topic: *Hierarchical SOS: A hierarchical method for concept generation and optimization.*

2012 Dmitry Daskal, M.Sc. Project topic: *Learning to Design.*

2013 Ziv Nahari, M.Sc. Project topic: *Biomimetic design with the biomimetic structural design method (co-supervised with Yael Helfman-Cohen).*

2013 Yoav Meiraz, M.Sc. Project topic: *Biomimetic design with the biomimetic structural design method (co-supervised with Yael Helfman-Cohen).*

2014 Ido Avisar, M.Sc. Project topic: *Small UAVs general characteristics and implementations with solar energy.*

2014 Ron Plishchuckm, M.Sc. Project topic: *Conceptual design of an interceptor UAV.*

2014 Ron Lider, M.Sc. Project topic: *Small UAVs general characteristics and implementations with fuel cells.*

2014 Oren Arad, M.Sc. Project topic: *Design of a device for automatic measuring of numerical aperture*

in T600 model machine.

2014 Yoav Student, M.Sc. Project topic: Development an automatic air perfumer add-on for the vacuum cleaning robots.

2016 Dan Assa, M.Sc. Thesis topic: Change management.

2017 Daniel Cahan (student of Prof. Offer Shai, deceased), M.Sc. Thesis topic: Examination of stability for tensegrity structures through the theory of mechanisms.

2017 Avshalom Sheffer (student of Prof. Offer Shai, deceased), M.Sc. Thesis topic: Singular characterizations of parallel mechanisms.

2017 Lidor Yeger, M.Sc. Project topic: Mechanism with two rotation axes – Design and analysis report, with Iddo Kressel.

2017 Elad Eiluz, M.Sc. Project topic: Development of an energy absorption device, with Yativ Shechter and Tomer Yechezkel.

2017 Elad Hahn (student of Prof. Offer Shai, deceased), M.Sc. Thesis topic: A universal construction rule for the structural synthesis of mechanisms and trusses.

2018 Gadi Tennenbaum, M.Sc. Thesis topic: Predicting potential evolution of system, with Aharon Hauptman and Shalom Shahar.

2018 Amir Danino, M.Sc. Project: Evaluation of the PSI Matrix Suitability to Start-Up Companies – Innoventric as a Case Study.

2018 Ziv Berger, M.Sc. Project: Implementing the PSI framework on the V model for developing systems.

2019 Uziel Hershkowitz, M.Sc. Project: systems engineering of a UAV team.

2019 Shai Tofach, M.Sc. Project: PSI analysis of due diligence process and startup failures.

2019 Hai Sitton, M.Sc. Project: Braking monolithic systems into many micro-systems.

2020 Netanel Mymon, M.Sc. Project: PSI analysis of due diligence process and startup failures.

2020 Sharon Asis, M.Sc. Thesis topic: Reducing Varroa destructor impact on bees with mechanical means (with Profs. Victoria Soroker and Ido Bruno).

2020 Margarita Nepomnishi, M.Sc. Project: Development of Monitoring System As part of the Implementation of Condition-Based Maintenance in IDF Ground Fleet (with Asaf Cohen).

2021 Krihely Teni, M.Sc. Thesis topic: Architecture of cloud edge system.

2021 Tomer Dabach, M.Sc. Project topic: A system for testing shock absorber systems (with Max Linshits).

2022 Ada Orion, M.Sc. Project topic: Designing a manned spaceship to Titan without an external supply of food and water for 5 crew members for 6.5 years (with Uzi Orion).

2022 Or Gazit, M.Sc. Project topic: Complex Systems Delivered by Complex Project Management (with Dr. Ori Orhof).

2022 Oren Katz, M.Sc. Project topic: An approach to integrate reliability factors in risk estimation of systems in development projects (with Dr. Amit Teler).

2022 Rotem Sigron, M.Sc. Project topic: The changes in systems engineering due to Industry 4.0 (with Uzi Orion).

2022 Israel Ben Kalifa, M.Sc. project topic: PSI Smart Editor.

2022 Lior Shimshoni, M.Sc. project topic: Systems Engineering 2050 (with Dr. Miri Sitton).

2023 Barak Koifman, M.Sc. Thesis Topic: OPTIRISK: Multi-Objectives Optimization Model for Risk Analysis Process as Part of System Development (with Uzi Orion).

2023 Lital Haham, M.Sc. project topic: Extracting entities for cybersecurity

2023 Idan Vaisberg, M.Sc. project topic: The system detailed design process (with Dr. Drora Goshen).

2023 Jordan Peer, M.Sc. Thesis Topic: NLP4ReF - Requirements Elicitation Optimization with Natural Language Processing and Large Language Models (with Dr. Yaniv Mordecai).

2023 Yossi Kodish, M.Sc. project topic: Reliability Shades of Systems

2023 Ehab Silawi, M.Sc. project topic: Translating the STPA-sec security method into a model-based engineering approach (with Dr. Avi Shaked).

2024 Sharon Waisman, M.Sc. Thesis Topic: detail architecture design (with Dr. Drora Goshen)

2025 Rozi Alon, M.Sc. Thesis Topic: generic platform architecture (with Dr. Miri Sitton)

2025 Daniel Aron, M.Sc. Thesis Topic: Designing a Generic Interface with Implementation on Smart Grid Systems: Redefining Interfaces with an Adaptive Approach.

2025 Tzvika Kaminsky, M.Sc. Thesis Topic: Ad-Hoc and Dynamic System Integration Utilizing Artificial Intelligence.

2025 Roy Alkalay, M.Sc. Thesis Topic: Optimal Generic Architecture Optimization Model for Ground Robotic Human-Controlled Platform (with Dr. Miri Sitton).

2025 Noga Chemo, M.Sc. Thesis Topic: A Safety Architecture Framework for Functional and Engineering Requirements – SAFER (with Dr. Yaniv Mordecai).

2025 Liron Shimshvili, M.Sc. Thesis Topic: Fluidic Architecture: Concept Definition and Motivating Examples.

2024- Eldar Cohen, M.Sc. Thesis Topic: Integrating Robustness Analysis into Model-Based Systems Architecting (with Dr. Yaniv Mordecai).

2024- Shai Dahari, M.Sc. Thesis Topic: Risks.

2024- Naor Magen, M.Sc. Thesis Topic: Swarm Architecture.

2024- Matan Sogbaker, M.Sc. Thesis Topic: PSI analysis (with Dr. Shlomi Efrati)

2024- Ido Perchik, M.Sc. Thesis Topic: never-ending projects (with Dr. Ori Orhof).

2024- Daniel Rosenzweig, M.Sc. Thesis Topic: antifragility.

2024- Elad Beker, M.Sc. Thesis Topic: generic architecture (with Dr. Miri Sitton).

F. 4. UNDERGRADUATE STUDENTS' SUPERVISION

Supervised numerous final projects of students in mechanical and electrical engineering

G. ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

- [1] 19th Israel Conference on Mechanical Engineering, (Beer-Sheva, Israel), 1985
- [2] Structures Congress '89, San Francisco, CA, ASCE, 1989
- [3] The First International Workshop on Formal Methods in Engineering Design, Fort Collins, Colorado, 1990
- [4] The 1991 ANSYS Conference & Exhibition, (Pittsburgh, PA), Swanson Analysis Inc., 1991
- [5] The First International Conference on Artificial Intelligence in Design, Edinburgh, UK, 1991
- [6] Eighth International Workshop on Machine Learning (Evanston, IL), 1991
- [7] First International Workshop on Multistrategy Learning, 1991
- [8] The Second International Conference on Artificial Intelligence in Design, Pittsburgh, 1992
- [9] Computing in Civil Engineering (Dallas, TX), ASCE, 1992
- [10] Participatory Design Conference (Cambridge, MA), 1992
- [11] Seventh Banff Knowledge Acquisition for Knowledge-Based Systems, 1992
- [12] The 10th Israeli Symposium on Artificial Intelligence, Computer Vision, and Neural Networks, 1993
- [13] Bridging the Generations: An International Workshop on the Future Directions of Computer-Aided Engineering, (Pittsburgh, PA), 1994
- [14] First Congress on Computing in Civil Engineering (Washington, DC), 1994
- [15] 25th Israel Conference on Mechanical Engineering, (Haifa, Israel), 1994
- [16] 15th Israeli Conference on Advanced Technologies in Engineering, Management, and Manufacturing, 1995
- [17] International Workshop on Knowledge Intensive CAD, 1995
- [18] Fourth International Workshop on Artificial Intelligence in Economics and Management, (Ramat Aviv, Israel), 1996

- [19] Israel-Germany Bi-National Conference on Computer Integrated Extended Manufacturing Enterprise, 1996
- [20] 26th Israel Conference on Mechanical Engineering, (Haifa, IL), 1996
- [21] General Design Theory Workshop, Cambridge, UK, 1997 – **invited participation**
- [22] ASME Design Theory and Methodology DTM '97, ASME, 1997
- [23] 27th Israel Conference on Mechanical Engineering, 1998
- [24] General Design Theory Workshop, Cambridge, UK, 1999 – **invited participation**
- [25] 5th Israel Conference on Quality, 1999
- [26] The SME Workshop on Engineering Knowledge Management, (Tel Aviv), 1999
- [27] 28th Israel Conference on Mechanical Engineering, 2000
- [28] The Modeling of Synthesis Symposium, 2000. University of Tokyo, Japan, 2000
- [29] CIRP Design Seminar, (Haifa, Israel), 2000
- [30] 13th International Conference on Engineering Design (ICED), Glasgow, 2001
- [31] 29th Israel Conference on Mechanical Engineering, (Haifa, Israel), 2003
- [32] 15th International Conference on Design Theory and Methodology (DTM), ASME, 2003
- [33] 14th International Conference on Engineering Design (ICED), Melbourne, 2003
- [34] 30th Israeli Conference on Mechanical Engineering, 2005
- [35] Mudd Design Workshop V, Claremont, CA, 2005
- [36] 15th International Conference on Engineering Design (ICED), Stockholm, 2005
- [37] First Israeli Conference on Robotics, Tel Aviv, 2006
- [38] International Conference on Systems Engineering and Modeling - ICSEM'07, Haifa, 2007
- [39] INCOSE International Symposium (INCOSE 2007), San Diego, CA, 2007
- [40] 16th International Conference on Engineering Design (ICED), Paris, 2007
- [41] 4th National Conference on Systems Engineering (INCOSE IL), Herzliya, 2007
- [42] 9th Bar-Ilan Symposium on the Foundations of Artificial Intelligence (BISFAI 2007), Bar-Ilan University, Ramat Gan, 2007
- [43] 11th Conference of the Project Management Institute, Israel Chapter, 2007
- [44] Israel 9th National Conference on Quality, November 2007
- [45] Seminar on Design Theory, Ecole des Mines de Paris, January 2008
- [46] Israel-Germany Bi-National Conference on Knowledge-based Integrative Product Development and Manufacturing, February 2008
- [47] Quality Theory Conference, Ort Braude College, May 2008
- [48] 6th Seminar and Workshop on Engineering Design in Integrated Product Development, EDIPROD'2008, Gdynia, Poland, 2008 – **invited participation**
- [49] 9th Biennial ASME Conference on Engineering Systems Design and Analysis, Haifa, 2008
- [50] 5th National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel, 2009
- [51] Second International Conference on Model-Based Systems Engineering (MBSE09), Herzliya and Haifa, Israel, 2009
- [52] 1st International Workshop on Design Theory, SIG of the Design Society, Paris, 2009
- [53] *Research in Systems Engineering Symposium*, Technion, June 2009
- [54] 17th International Conference on Engineering Design (ICED'09), Stanford, CA, 2009 (including 2nd International Workshop on Design Theory)
- [55] 3rd International Workshop on Design Theory, SIG of the Design Society, Paris, 2010
- [56] 11th International Design Conference, DESIGN2010, Dubrovnik, May 2010 – **invited participation**

- [57] *Research in Systems Engineering Symposium*, Technion, June 2010.
- [58] 18th Annual Conference of the International Group for Lean Construction (IGLC), Haifa, Israel, 2010.
- [59] 4th International Workshop on Design Theory, SIG of the Design Society, Paris, 2011
- [60] Publishing Workshop, Design Society, Grenoble, 2011 – **invited participation**
- [61] 18th International Conference on Engineering Design (ICED'11), Copenhagen, Denmark, 2011 (including 5th International Workshop on Design Theory)
- [62] 5th International Workshop on Design Theory, SIG of the Design Society, Paris, 2012
- [63] Innovation leaders, Lake Como, September 2012 – **invited participation**
- [64] CDIO conference, France, October 2012
- [65] 6th International Workshop on Design Theory, SIG of the Design Society, Paris, 2013
- [66] 19th International Conference on Engineering Design (ICED'13), Seoul, Korea
- [67] 7th International Workshop on Design Theory, SIG of the Design Society, Paris, 2014
- [68] Publishing Workshop, Design Society, Grenoble, 2014 – **invited participation**
- [69] The First Biomimicry Conference – Academy & Industry, Herzliya, 2014
- [70] 8th International Workshop on Design Theory, SIG of the Design Society, Paris, 2015
- [71] 20th International Conference on Engineering Design (ICED'15), Milan, 2015
- [72] 33rd Israeli Conference on Mechanical Engineering (ICME 2015), Tel Aviv, 2015
- [73] 19th Israeli Conference of the Project Management Institute (PMI 2015), Tel Aviv, 2015 – **invited participation**
- [74] Research & Practice Conference in Systems Engineering, Project Management and their Interface, (INCOSE-PMI), Herzliya, 2015 – **invited participation**
- [75] 15th International Conference of The European TRIZ Association (ETRIA, 2015), Berlin, 2015 – **invited participation**
- [76] The Second Biomimicry Conference – Academy & Industry, Tel Aviv, 2015
- [77] 9th International Workshop on Design Theory, SIG of the Design Society, Paris, 2016
- [78] NSF workshop on Engineering a Better Future, Pittsburgh, 2016 – **invited participation**
- [79] Gordon Conference on Frontiers of Engineering Design (GCFED 2016), Changsha, China, 2016 – **invited participation**
- [80] International symposium Industrial property in innovative economy", Krakow, 1-2 September 2016 – **invited presentation**
- [81] International symposium OH-MAN, OH-MACHINE 2016, The Question Concerning Technology and Biology, Tel Aviv, 19-20 December 2016 – **invited presentation**
- [82] 10th International Workshop on Design Theory, SIG of the Design Society, Paris, 2017
- [83] 9th National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel, 2017
- [84] ASME 2017 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC17, Cleveland, Ohio, USA, August 2-5, 2017
- [85] 21st International Conference on Engineering Design (ICED'17), Vancouver, 2017
- [86] 11th International Workshop on Design Theory, SIG of the Design Society, Paris, 2018
- [87] 12th International Workshop on Design Theory, SIG of the Design Society, Paris, 2019
- [88] 10th National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel, 2019
- [89] 22nd International Conference on Engineering Design (ICED'19), Delft, 2019
- [90] 2019 International Conference on Mechanical Design & the 20th Mechanical Biennial Conference (2019ICMD), Huzhou, China, 2019 – **invited participation**

- [91] Emerging Practices: Design Research and Education Conference (EPC) 2019, Shanghai, China, 2019 – **invited participation**
- [92] 13th International Workshop on Design Theory, SIG of the Design Society, Paris, 2020
- [93] National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel, 2022 – **invited presentation**
- [94] 20th International Conference on Systems Engineering Research (CSER 2023), Hoboken, NJ, 2023
- [95] 22nd International Conference on Engineering Design (ICED'23), Bordeaux, France, 2023
- [96] National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel
- [97] 18th International Workshop on Design Theory, SIG of the Design Society, Paris, 2025
- [98] 23rd International Conference on Engineering Design (ICED'25), Dallas, TX
- [99] National Conference on Systems Engineering of INCOSE-IL, Herzliya, Israel, 2025
- [100] 19th International Workshop on Design Theory, SIG of the Design Society, Paris, 2026

H. LIST OF PUBLICATIONS

H.1. Books

- [1] A. Karniel and Y. Reich, *Managing the Dynamics of New Product Development Processes: A New Product Lifecycle Management Paradigm*, Springer, 2011.
- [2] Helfman Cohen Y. and Reich Y., *Biomimetic Design Method for Innovation and Sustainability*, Springer, 2016.
- [3] Subrahmanian E., Reich Y., and Krishnan, S., *We are Not Users: Dialogues, Diversity, and Design*, MIT Press, 2020.
- [4] Nevo, M., Reich, Y., Mishori, D., Levin, L. (editors), Leshomra, Sustainable and Ecological Communities in Israel, Resling, Tel Aviv, 2023, In Hebrew.

H.2. Original Articles

Articles Published

- [1] M. Eisenberger and Y. Reich, Static, vibration, and stability analysis of non-uniform beams, *Computers and Structures*, 31(4):567-573, 1989.
- [2] Y. Reich and M. B. Fuchs, A comparison of explicit optimal design methods, *Computers and Structures*, 32(1):175-184, 1989.
- [3] Y. Reich and S. J. Fenves, The potential of machine learning techniques for expert systems, *Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, 3(3):175-193, 1989.
- [4] Y. Reich, Design knowledge acquisition: Task analysis and a partial implementation, *Knowledge Acquisition*, 3(3):237-254, 1991.
- [5] Y. Reich and S. J. Fenves, Inductive learning of synthesis knowledge, *International Journal of Expert Systems: Research and Applications*, 5(4):275-297, 1992.
- [6] Y. Reich, A model of aesthetic judgment in design, *Artificial Intelligence in Engineering*, 8(2):141-153, 1993.
- [7] D. Fisher, X. Ling, R. Carnes, Y. Reich, S. Fenves, J. Chen, R. Shiavi, G. Biswas, and J. Weinberg, Selected applications of an AI clustering technique to engineering tasks, *IEEE Expert*, 8(6):51-60, 1993.
- [8] Y. Reich, The development of Bridger: A methodological study of research on the use of machine learning in design, *Artificial Intelligence in Engineering*, 8(3):217-231, 1993.

- [9] E. Subrahmanian, S. L. Konda, S. N. Levy, Y. Reich, A. W. Westerberg, and I. A. Monarch Equations aren't enough: Informal modeling in design, *Artificial Intelligence in Engineering Design, Analysis, and Manufacturing*, 7(4):257-274, 1993.
- [10] Y. Reich, S. Konda, S. N. Levy, I. Monarch, and E. Subrahmanian, New roles for machine learning in design, *Artificial Intelligence in Engineering*, 8(3):165-181, 1993.
- [11] Y. Reich, Layered models of research methodologies, *Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, 8(4):263-274, 1994.
- [12] Y. Reich and S. J. Fenves, A system that learns to design cable-stayed bridges, *Journal of Structural Engineering, ASCE*, 121(7):1090-1100, 1995.
- [13] Y. Reich, A critical review of General Design Theory, *Research in Engineering Design*, 7(1):1-18, 1995.
- [14] Y. Reich, The study of design research methodology, *Journal of Mechanical Design, ASME*, 117(2(A)):211-214, 1995.
- [15] Y. Reich, Measuring the value of knowledge, *International Journal of Human-Computer Studies*, 42(1):3-30, 1995.
- [16] Y. Reich and N. Travitzky, Machine learning of material behavior knowledge from empirical data, *Materials & Design*, 16(5):251-259, 1995.
- [17] Y. Reich, M. Medina, T.-Y. Shieh, and T. Jacobs, Modeling and debugging engineering decision procedures with machine learning, *Journal of Computing in Civil Engineering*, 10(2):157-166, 1996.
- [18] Y. Reich, S. L. Konda, S. N. Levy, I. A. Monarch, and E. Subrahmanian, Varieties and issues of participation and design, *Design Studies*, 17(2):165-180, 1996.
- [19] Y. Reich, Modeling engineering information with machine learning, *Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, 10(2):171-174, 1996.
- [20] Y. Reich, Artificial intelligence in bridge engineering, *Microcomputers in Civil Engineering*, 11(6):433-445, 1996.
- [21] Y. Reich, Machine learning techniques for civil engineering problems, *Microcomputers in Civil Engineering*, 12(4):307-322, 1997.
- [22] A. W. Westerberg, E. Subrahmanian, Y. Reich, S. Konda, D. P. Cunningham, A. H. Dutoit, H. L. Granger, K. C. Marshall, R. C. Milliken, I. A. Monarch, J. P. Neergaard, R. H. Patrick, and M. E. Thomas, Designing the process design process, *Computers & Chemical Engineering*, 21:S1-S9, 1997.
- [23] Y. Reich, Learning in design: From characterizing dimensions to working systems, *Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, 12(2):161-172, 1998.
- [24] Y. Reich and S. V. Barai, Evaluating machine learning models for engineering problems, *Artificial Intelligence in Engineering*, 13(3):257-272, 1999.
- [25] Y. Reich, E. Subrahmanian, D. Cunningham, A. Dutoit, S. Konda, R. Patrick, A. Westerberg, and the n -dim group, Building agility for developing agile design information systems, *Research in Engineering Design*, 11(2):67-83, 1999.
- [26] S. V. Barai and Y. Reich, Ensemble modeling or selecting the best model: Many can be better than one, *Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, 13(5):377-386, 1999.
- [27] Y. Reich and S. V. Barai, A methodology for building neural networks models from empirical engineering data, *Engineering Applications of Artificial Intelligence*, 13(6):685-694, 2000.
- [28] Y. Reich, Improving the rationale capture capability of QFD, *Engineering with Computers*, 16(3-4):236-252, 2000.
- [29] Y. Reich, Life cycle management of information and decisions for system analyses, *Mechanical Systems and Signal Processing*, 15(3):513-527, 2001.

- [30] G. Dobrescu and Y. Reich, Progressive sharing of modules among product variants, *Computer-Aided Design*, 35(9):791-806, 2003.
- [31] E. Kolberg, Y. Reich, and I. Levin, Project-based high school mechatronics course, *International Journal of Engineering Education*, 19(4):557-562, 2003.
- [32] D. Braha and Y. Reich, Topological structures for modeling engineering design processes, *Research in Engineering Design*, 14(4):185-199, 2003.
- [33] I. Levin, E. Kolberg, and Y. Reich, Robot control teaching with state machine based design method, *International Journal of Engineering Education*, 20(2):234-243, 2004.
Invited reprint with some modifications: I. Levin, E. Kolberg, and Y. Reich, "Designing control system for mobile educational robot," *INFO International Journal on Informatics in Education*, 3:87-94, 2004. (in Russian).
- [34] Y. Reich and A. Kapeliuk, Case-based reasoning with subjective influence knowledge, *Applied Artificial Intelligence*, 18(8):735-760, 2004.
- [35] Y. Reich and E. Levy, Managing product design quality under resource constraints, *International Journal of Production Research*, 42(13):2555-2572, 2004.
- [36] O. Shai and Y. Reich, Infused design: I theory, *Research in Engineering Design*, 15(2):93-107, 2004.
- [37] O. Shai and Y. Reich, Infused design: II practice, *Research in Engineering Design*, 15(2):108-121, 2004.
- [38] A. Kapeliuk, Y. Reich, and R. Bar-Lev, Knowledge system supporting attendance officer's decision making and dropout prevention, *International Journal of Educational Management*, 18(6):342-350, 2004.
- [39] A. Karniel, Y. Belsky, and Y. Reich, Decomposing the problem of constrained surface fitting in reverse engineering, *Computer-Aided Design*, 37(4):399-417, 2005.
- [40] Y. Reich and A. Kapeliuk, A framework for organizing the space of DSS with application to solving subjective, context dependent problems, *Decision Support Systems*, 41(1):1-19, 2005.
- [41] A. Ziv-Av and Y. Reich, SOS – Subjective objective system for generating optimal product concepts, *Design Studies*, 26(5):509-533, 2005.
- [42] Y. Reich, E. Kolberg, and I. Levin, Designing contexts for learning design, *International Journal of Engineering Education*, 22(3):489-495, 2006.
- [43] Y. Sered and Y. Reich, Standardization and modularization driven by minimizing overall process effort, *Computer-Aided Design*, 38(5):405-416, 2006.
- [44] Y. Reich and A. Paz, Managing product quality, risk, and resources through resource quality function deployment, *Journal of Engineering Design*, 19(3):249-267, 2007.
- [45] O. Shai, Y. Reich, and D. Rubin, Creative conceptual design: extending the scope by infused design, *Computer-Aided Design*, 41(3):117-135, 2009.
- [46] A. Karniel and Y. Reich, From DSM-based planning to Design Process Simulation: A review of process-scheme logic verification issues, *IEEE Transactions on Engineering Management*, 56(4):636-649, 2009.
- [47] Reich, Y., Ullmann, G., Van der Loos, M., Leifer, L., Coaching product development teams: A conceptual foundation, *Research in Engineering Design*, 19(4):205-222, 2009.
- [48] A. Karniel and Y. Reich, Formalizing a workflow-net implementation of Design-Structure-Matrix-based process planning for New product development, *IEEE Systems, Man, and Cybernetics- Part A: Systems and Humans*, 41(3):476-491, 2011.
- [49] O. Dor and Y. Reich, An evaluation of musical score characteristics and classification of major classical composers including Mozart, Bach and Beethoven, *Computer Music Journal*, 35(3):86-97, 2011.

- [50] Y. Reich, A. Hatchuel, O Shai, and E. Subrahmanian, A theoretical analysis of creativity methods in engineering design: Casting ASIT within C-K Theory, *Journal of Engineering Design*, 23(2):137-158, 2012.
- [51] O. Dor, Y. Reich, Strengthening learning algorithms by feature discovery, *Information Sciences*, 189:176-190, 2012.
- [52] Y. Reich and O. Shai, The Interdisciplinary Engineering Knowledge Genome, *Research in Engineering Design*, 23(3):251-264, 2012.
- [53] J. Shabi and Y. Reich, Developing an analytical model for planning the verification, validation & testing process, *Advanced Engineering Informatics*, 26(2):429-438, 2012.
- [54] O. Shai, Y. Reich, A. Hatchuel, E. Subrahmanian, Creativity and scientific discovery with Infused Design and its analysis with C-K theory, *Research in Engineering Design*, 24(2):201-214, 2013.
- [55] A. Karniel, Y. Reich, Multi-level modeling and simulation of new product development processes, *Journal of Engineering Design*, 24(3):185-210, 2013.
- [56] O. Dor, Y. Reich, Enhancing learning algorithms to support data with short sequence features by automated feature discovery, *Knowledge-Based Systems*, 52:114-132, 2013.
- [57] E. Kolberg, Y. Reich, and I. Levin, Designing winning robots by careful design of their development process, *Research in Engineering Design*, 25(2):157-183, 2014.
- [58] Y. Helfman Cohen, Y. Reich, and S. Greenberg, Biomimetics: structure-function patterns approach, *Journal of Mechanical Design*, 136(11), 111108-1, 2014.
- [59] Y. Helfman Cohen, Y. Reich, and S. Greenberg, Sustainability strategies in nature, *International Journal of Design & Nature and Ecodynamics*, 9(4):285-295, 2014.
- [60] A. Engel and Y. Reich, Advancing Architecture Options Theory: Six Industrial Case Studies, *Systems Engineering*, 18(4):396-414, 2015.
- [61] M. Sitton and Y. Reich, Enterprise systems engineering for better operational interoperability, *Systems Engineering*, 18(6):625-638, 2016.
- [62] A. Engel, T.R. Browning, and Y. Reich, Designing Products for Adaptability: Insights from Four Industrial Cases, *Decision Science*, 2017.
- [63] J. Shabi and Y. Reich, R. Diamant, Planning the verification, validation & testing process: A case study, *Journal of Engineering Design*, 28(3):171-204, 2017.
- [64] Y. Reich, The principle of reflexive practice, *Design Science*, 3, 2017. <https://doi.org/10.1017/dsj.2017.3>
- [65] Hatchuel, A., Le Masson, P., Reich, Y., Subrahmanian E., Design theory: A foundation of a new paradigm for design science and engineering, *Research in Engineering Design*, 29(1), 2018.
- [66] Sitton, M. and Reich, Y., EPIC Framework for Enterprise Processes Integrative Collaboration, *Systems Engineering*, 2018. <https://doi.org/10.1002/sys.21417>
- [67] Slavutin, M., Sheffer, A., Shai, O. and Reich, Y., A Complete Geometric Singular Characterization of the 6/6 Stewart Platform, *Journal of Mechanisms and Robotics*, 10(4), 041012, 2018.
- [68] Sitton, M. and Reich, Y., ESE framework verification by MBSE, *IEEE Systems Journal*, 2018.
- [69] Slavutin, M. and Reich, Y., A novel criterion for singularity analysis of parallel mechanisms, *Mechanisms and Machine Theory*, 2019.
- [70] Slavutin, M. and Reich, Y., Singularity analysis of multi-platform mechanisms by decomposition and reciprocity, *Mechanisms and Machine Theory*, 2019.
- [71] Shaked, A, and Reich, Y., Designing Development Processes Related to System of Systems Using a Modeling Framework, *Systems Engineering*, 2019. **Best paper of the journal for 2019.**
- [72] Hakuk Y. and Reich, Y., Automated discovery of scientific concepts: replicating three recent discoveries in mechanics, *Advanced Engineering Informatics*, 2020.

- [73] Reich, Y. and Subrahmanian, E., The PSI Framework and Theory of Design, *IEEE Transactions on Engineering Management*, 2020.
- [74] Shaked, A., and Reich, Y., Improving process descriptions in research by model-based analysis, *IEEE Systems Journal*, 2020.
- [75] Shaked, A., Tabansky, L. and Reich, Y., Incorporating systems thinking into a cyber resilience maturity model, *IEEE Engineering Management Review*, 2020.
- [76] Shaked, A., and Reich, Y., Requirements for model-based development process design and compliance of standardized models, *Systems*, 2021.
- [77] Shaked, A., and Reich, Y., Using Domain-Specific Models to Facilitate Model-Based Systems-Engineering: Development Process Design Modeling with OPM and PROVE, *Applied Science*, 2021. **Invited as a feature paper.**
- [78] Shabi, J., Reich, Y., Robinzon R., and Mirer, T. A decision support model to manage overspecification in system development projects, *Journal of Engineering Design*, 2021.
- [79] Reich, Y. and Subrahmanian, E., We are not users: Gaining control over new technologies, *Communications of the ACM*, 2021.
- [80] Engel, A., Teller, A., Shachar, S., Reich, Y., Robust design under cumulative damage due to dynamic failure mechanisms, *Systems Engineering*, 2021. **Journal outstanding paper for 2021.**
- [81] Shabi, J., Reich, Y., Configuring Systems Verification, Validation & Testing Plan under Various Constraints and Unpredicted Events, *International Journal of Product Development*, 25(4):369-393, 2021.
- [82] Reich, Y. and Subrahmanian, E., Documenting design research by structured multilevel analysis: Supporting the diversity of the design research community of practice, *Design Science*, 2022.
- [83] Reich, Y. We cannot play 20 questions with creativity and innovation and win: The necessity of practice-based integrative research, *International Journal of Design Creativity and Innovation*, 2022.
- [84] McMahon, C., Subrahmanian, E., Reich, Y., Lock-In, Fixation and the Extinction of Technologies, *She Ji: The Journal of Design, Economics, and Innovation*, 2022.
- [85] Reich, Y., The Archimedes Code: Design Theory and Complex Systems Engineering Perspectives, *Design Science*, 2023.
- [86] Efrati, S. and Reich, Y., Product representation via networks methodology for exposing project risks, *Research in Engineering Design*, 2023.
- [87] Hakuk Y. and Reich, Y., Computational infrastructure for concepts discovery in science and technology, *Advanced Engineering Informatics*, 2023.
- [88] Lavi, E. and Reich, Y., A comprehensive overview of system value towards value-oriented design, *Research in Engineering Design*, 2023.
- [89] Lavi, E. and Reich, Y., Supporting decision-making in value-oriented design: A multi-domain system value model, *IEEE Transactions on Engineering Management*, 2024.
- [90] Reich, Y. and Subrahmanian, E., Navigating complexity beyond collaborative design: The PSI network model and case studies, *Research in Engineering Design*, 2025.
- [91] Efrati, S. and Reich, Y., System Flow Centrality Index for Evaluating the Influence of a Given System Element in a Network Graph, *Expert Systems with Applications*, 2025.
- [92] Reich, Y. and Subrahmanian, E., Bridging Design and Economics: A PSI Framework Analysis of Residency Market Evolution, *She Ji: The Journal of Design, Economics, and Innovation*, 11(2):217-235, 2025.
- [93] Sitton, M., Alon, R., and Reich, Y., Generic Architecture for Self-Organized Adaptive Platform System of Systems, *Systems*, 2025. **Selected out of 92 papers to appear on the journal's cover.**
- [94] Hershkovitz, A., Tabach, M., Reich, Y., Lurie, L., and Cholzman, T., Framing and Evaluating Task-

Centered Generative Artificial Intelligence Literacy for Higher Education Students, *Systems*, 13(7), 518, 2025.

[95] Reich, Y., A framework for analyzing and supporting communities on their path to sustainability, *Sustainability*, 17(160), 7262, 2025.

[96] Reich, Y., Learning to Use Generative AI and Using it to Improve Learning: A Systems Engineering Research Seminar Case Study, *Systems*, 13(11), 1006, 2025. **Selected out of 115 papers to appear on the journal's cover.**

[97] Lefler, R. and Reich, Y. Addressing Environmental and Societal Challenges through Systems Thinking: Lessons from Socially Sensitive Environmental Projects, *Environmental Development*, 588, 101408, 2026.

H.3. Chapters in Book

[1] Y. Reich, "Constructive induction by incremental concept formation," in *Artificial Intelligence and Computer Vision* (Y. A. Feldman and A. Bruckstein, eds.), pp. 191-204, Amsterdam: Elsevier Science Publishers, 1991.

[2] Y. Reich and S. J. Fenves, "The formation and use of abstract concepts in design," in *Concept Formation: Knowledge and Experience in Unsupervised Learning* (D. H. J. Fisher, M. J. Pazzani, and P. Langley, eds.), (Los Altos, CA), pp. 323-353, Morgan Kaufmann, 1991.

[3] Y. Reich and S. J. Fenves, "Inductive learning of bridge design knowledge," in *Knowledge Acquisition in Civil Engineering* (T. Arciszewski and L. A. Rossman, eds.), pp. 169-189, New York, NY: American Society of Civil Engineers, 1992.

[4] Y. Reich, "Text and reference books on knowledge acquisition and machine learning," in *Knowledge Acquisition in Civil Engineering* (T. Arciszewski and L. A. Rossman, eds.), pp. 204-214, New York: American Society of Civil Engineers, 1992.

[5] E. Subrahmanian, S. L. Konda, S. N. Levy, I. A. Monarch, Y. Reich, and A. W. Westerberg, "Computational support for shared memory in design," in *Automation-Based Creative Design: Research & Perspectives* (A. Tzonis and I. White, eds.), (Amsterdam), Elsevier Science Publishers, 1994.

[6] Y. Reich, "Macro and micro perspectives of multistrategy learning," in *Machine Learning: A Multistrategy Approach, Vol. IV* (R. S. Michalski and G. Tecuci, eds.), (San Francisco, CA), pp. 379-401, Morgan Kaufmann, 1994.

[7] Y. Reich, "Computational quality function deployment is knowledge intensive engineering," in *Knowledge Intensive CAD* (T. Tomiyama, M. Mantyla, and S. Finger, eds.), pp. 315-334, (London, UK), Chapman & Hall, 1996.

[8] Y. Reich, "AI-supported quality function deployment," in *Artificial Intelligence in Economics and Management* (P. Ein-Dor, ed.), (Boston, MA), pp. 91-106, Kluwer, 1996. **Invited Reprint** in: *IT-Enabled Quality Management Systems* (S. J. Krishna ed.), pp. 46-63, ICFAI University Press, Hyderabad, India, 2005.

[9] I. A. Monarch, S. L. Konda, S. N. Levy, Y. Reich, E. Subrahmanian, and C. Ulrich, "Mapping sociotechnical networks in the making," in *Social Science, Technical Systems, and Cooperative Work* (G. C. Bowker, L. S. Star, W. Turner, and L. Gasser, eds.), (Hillsdale, NJ), pp. 331-354, Lawrence Erlbaum, 1997.

[10] Y. Reich, "Collaborative environments for agile design," in *Changing Product Development: Trends in User Centered Computer Supported Product Development* (F.-L. Krause and K. Preiss, eds.), (Bethlehem, PA), Agility Forum, 1997.

[11] Y. Reich, "What is wrong with CAE and can it be fixed," in *Bridging the Generations: The Future of Computer-Aided Engineering*, pp. 259-265, (Pittsburgh, PA), Department of Civil Engineering, Carnegie Mellon University, 1999.

- [12] Y. Reich, “Synthesis and theory of knowledge: GDT as a theory of knowledge, and its implication to design,” in *Engineering Design Synthesis: Understanding, Approaches, and Tools* (A. Chakrabarti, ed.), pp. 35-48, (Berlin), Springer Verlag, 2002.
- [13] Y. Reich, “Data mining of design products and processes,” in *Data Mining and Knowledge Discovery Handbook: A Complete Guide for Practitioners and Researchers* (O. Maimon, and L. Rokach, eds.), pp. 1167-1187, (Boston, MA), Kluwer, 2005.
- [14] S. Meijer, Y. Reich, E. Subrahmanian, The future of gaming for design of complex systems. In R.D. Duke and W. Kriz (eds) *Back to the Future of Gaming*, 2014.
- [15] Y. Reich, Designing the future we want, In *Towards a Better Future: Interplay Between Engineering and Social Sciences*, Springer, 2018.
- [16] Y. Reich, A framework for analyzing and informing communities in their quest for sustainability. In Nevo, M., Reich, Y., Levin, L., Mishori, D. (editors), Leshomra, Sustainable and Ecological Communities in Israel, Resling, Tel Aviv, 2023, in Hebrew.

H.4. Invited Papers and Presentations

- [1] Y. Reich, “Book review: Exemplar-Based Knowledge Acquisition, by Ray Bareiss. Academic Press, 1989,” *Machine Learning*, 6(1, pp. 99-103, 1991. Refereed 1st book review in *Machine Learning* journal
- [2] Y. Reich, “From General Design Theory to Community Design Theory.” General Design Theory Workshop, Cambridge, UK, Dec. 11, 1997
- [3] Y. Reich, “The (almost) intolerable dynamism of enterprise knowledge management,” *Executive*, 22, pp. 38-40, 1997. (In Hebrew)
- [4] Y. Reich, General Design Theory Workshop, Cambridge, UK, 1999
- [5] Y. Reich, “Preliminary product design decision-making,” in *The Modeling of Synthesis Symposium*, 2000. University of Tokyo, Japan, 2000
- [6] Y. Reich, “Life-cycle knowledge management.” Department of Industrial Engineering, Graduation Ceremony, Ben Gurion University, June 12, 2001
- [7] Y. Reich, “New directions for product concept development.” *Keynote lecture, Solidworks World Israel*, September 15, Tel Aviv, 2003
- [8] Y. Reich, From generic learning tasks to knowledge discovery process management
An 18 year journey, *Seminar on Computational Learning and Adaptation*, Stanford University, October 13, 2004
- [9] O. Shai, Y. Reich, and D. Rubin, “Infused creativity: An approach to creative system design,” *Ambidextrous*, Stanford’s Design School Magazine, Issue 1, Stanford, CA, 2005
- [10] Y. Reich, Product Concept Innovation: Off the Shelf and Out of the Box, NIST, March 31, 2005
- [11] Y. Reich, Product Concept Innovation: Off the Shelf and Out of the Box, *Alliance for Innovative Manufacturing (AIM), Advisory Board Meeting*, Stanford, April 5, 2005
- [12] Y. Reich, Product Concept Innovation: Off the Shelf and Out of the Box, *Design and Manufacturing Forum Lecture*, Stanford, April 15, 2005
- [13] Y. Reich, Product Concept Innovation: Off the Shelf and Out of the Box, General Motors Co., Warren, MI, June 15, 2005
- [14] Y. Reich, Product Concept Innovation: Off the Shelf and Out of the Box, Ford Motors Co., Dearborn, MI, June 16, 2005
- [15] E. Subrahmanian and Y. Reich, Advancing Problem Definition and Concept Generation for Improved Product Life Cycle, *International Conference on Trends in Product Life Cycle, Modeling, Simulation and Synthesis, PLMSS-2006*, 18-20 December, Bangalore, India, 2006
- [16] Y. Reich, Three Essential Process Competencies of Systems and Product Development, Indian Institute of Technology Bombay, January 5, Bombay, India, 2007

- [17] Y. Reich, *Israel 9th National Conference on Quality*, November 2007
- [18] Y. Reich, Invited seminar on Design Theory, Ecole des Mines de Paris, January 2008
- [19] Y. Reich, Simple tools for managing product development complexity, *2008 Israel-Germany Bi-National Conference on Knowledge-based Integrative Product Development and Manufacturing*, February 2008
- [20] Y. Reich, Simplicity leads to quality, **Keynote lecture**, *Quality Theory Conference*, Ort Braude College, May 2008
- [21] Y. Reich, *6th Seminar and Workshop on Engineering Design in Integrated Product Development, EDIProD'2008*, Gdynia, Poland, 2008
- [22] Y. Reich, *INCOSE-IL Workshop on approaches to product development*, October 2008
- [23] Y. Reich, Robust product concepts, *BQR seminar*, October 2008
- [24] Y. Reich, Invited seminar on Design Theory, Ecole des Mines de Paris, January 2009
- [25] Y. Reich, Is systems engineering a research discipline? *Planning a Roadmap for Systems Engineering Research*, Technion, 2009
- [26] Y. Reich, Developing systems in dynamic environments, *Research in Systems Engineering Symposium*, Technion, Haifa, Israel, 2009
- [27] Y. Reich, The quality paradox in system development, *10th Israeli National Conference on Quality*, 2009. (in Hebrew)
- [28] Y. Reich, Design religions, *DESIGN 2010*, Dubrovnik, Croatia, 2010. **Keynote speaker**
- [29] Y. Reich and O. Shai, The Interdisciplinary Engineering Knowledge Genome, *Research in Systems Engineering Symposium*, Technion, Haifa, Israel, 2010
- [30] Y. Reich, *Creativity and Innovation Management Community Workshop 2010*, Paris
- [31] Y. Reich, Lean? mean? How do we really win? *18th Annual Conference of the International Group for Lean Construction (IGLC)*, Haifa, Israel, 2010. **Guest Speaker**
- [32] Y. Reich, why do projects or systems fail?, ELOP 2010
- [33] Subrahmanian, E, Reich, Y, Smulders, F, Meijer, S.A., Designing: Weaving theories of cognition and Design theories, *4th Design Theory SIG Workshop*, Paris, 31 January-2 February 2011
- [34] O. Shai and Y. Reich, Designing to Design Interdisciplinary Engineering Knowledge Genome: perspective and new results, *4th Design Theory SIG Workshop*, Paris, 31 January-2 February 2011
- [35] Y. Reich, *Paper publishing workshop*, Grenoble, February 2011
- [36] Y. Reich and O. Shai, Managing Projects Complexity with Design Structure Matrix and the Interdisciplinary Engineering Knowledge Genome, *Research in Systems Engineering Symposium*, Technion, Haifa, Israel, 2011
- [37] Y. Reich, Design Theory: Why, What and How? Experience of the Design Theory SIG, *Chair of Design Theory and Methods for Innovation Event*, Paris, Mines ParisTech, February 2, 2012
- [38] Y. Reich, Design Theory: Why, What and How? Experience of the Design Theory SIG, *5th Design Theory SIG Workshop*, Paris, 2012
- [39] Y. Reich, O. Shai, Biomimetics and design theory, *5th Design Theory SIG Workshop*, Paris, 2012
- [40] Y. Reich, Designing Ourselves and Design Religions, Alta Scuola Politecnica (ASP) - Design Methods, Belgirate, Italy, May 18, 2012. **Invited Speaker**
- [41] Y. Reich, M. Samson, Innovation leaders, Lake Como, October 2012
- [42] Meijer S, Reich Y, Subrahmanian E, Gaming simulation for design: The Game Between Institutions and Design, *6th Design Theory SIG Workshop*, Paris, 2013
- [43] Subrahmanian E, Reich Y, Krishnan S, Social interactions, Cognitive artifacts, Globalization and Design theories, *6th Design Theory SIG Workshop*, Paris, 2013
- [44] Y. Reich, Designing Ourselves and Design Religions, Alta Scuola Politecnica (ASP) - Design Methods, Belgirate, Italy, May 23-24, 2013. **Invited Speaker**
- [45] E. Subrahmanian, Y. Reich, S. Krishnan, Design(ing) science and design(ing) theories, *7th Design Theory SIG Workshop*, Paris, 2014
- [46] Y. Reich, Robust optimal design of concepts and system architectures, Control and Optimization Symposium, IAI, Lod, Israel, 2015

- [47] Subrahmanian E, Reich Y, Designing the PSI framework, *8th Design Theory SIG Workshop*, Paris, 2015
- [48] Reich Y, Subrahmanian E, Le Masson P, 3 journeys into design theory, *8th Design Theory SIG Workshop*, Paris, 2015
- [49] Y. Reich, Startup Nation, Tel Aviv University, through a framework for ingenuity, Science Technology Business, Symposium, CEZAMAT, Warsaw, Poland, 20-21 April 2015, **Invited Presentation**
- [50] Y. Reich, PSI framework for development and innovation, Warsaw School of Economics, SGH, Poland, April 21, 2015, **Invited Presentation**
- [51] Y. Reich, Modularity vs interface complexity: application to the relation between project managers and systems engineers, ILTAM-PMI Symposium, Herzlia, Israel, May 5, 2015
- [52] Y. Reich, Designing Ourselves and Design Religions, Alta Scuola Politecnica (ASP) - Design Methods, Belgirate, Italy, May 2015, **Invited Presentation**
- [53] P. Le Masson, Y. Reich, E. Subrahmanian, Design theory: the foundations of a new paradigm for science and engineering, ICED15, **Keynote speaker**
- [54] Y. Reich, Governing creativity, *ETRIA 2015*, **Keynote speaker**
- [55] Y. Reich, Out of the box, ... into the PSI, *9th Design Theory SIG Workshop*, Paris, 2016
- [56] Y. Reich, Designing the Future, CMU, 2016, **Workshop by invitation**
- [57] Y. Reich, Modularity and some implications to engineering complex systems, *NIST*, 2016
- [58] Y. Reich, Designing a meaningful dialogue between disciplines, *GCFED 2016*, Changsha, China, 2016, **Keynote speaker**
- [59] Y. Reich, Designing a dialogue between biology and technology, what is the purpose? International symposium OH-MAN, OH-MACHINE 2016, The Question Concerning Technology and Biology, Tel Aviv, December 2016, **Invited Presentation**
- [60] Y. Reich, E Subrahmanian, The PSI (ψ) Matrix: A framework and a theory of design, *10th Design Theory SIG Workshop*, Paris, 30-31 January 2017
- [61] Y. Reich, E Subrahmanian, G Amar, Designing ethos, *10th Design Theory SIG Workshop*, Paris, 30-31 January 2017
- [62] Y. Reich, Designing sustainable communities, *11th Design Theory SIG Workshop*, Paris, 30-31 January 2018
- [63] Y. Reich, A reflexive view of PSI, *11th Design Theory SIG Workshop*, Paris, 30-31 January 2018
- [64] F. Smulders, Y. Reich, E. Subrahmanian, The Dreamliner's bumpy road to takeoff. Could Boeing have known? *11th Design Theory SIG Workshop*, Paris, 30-31 January 2018
- [65] M. Klasing Chen, D. Laousse, Y. Reich, E Subrahmanian, PSI as KCP method extension: opportunities to improve the design Process, *11th Design Theory SIG Workshop*, Paris, 30-31 January 2018
- [66] Y. Reich, and E. Subrahmanian, Unraveling the fractality of PSI in service of we the designers, *12th Design Theory SIG Workshop*, Paris, 28-29 January 2019
- [67] Y. Reich, Fostering Creativity and innovation with the PSI Framework, *2019 International Conference on Mechanical Design (2019 ICMD)*, August 12-14, 2019, Huzhou, China. **Keynote Speaker**
- [68] Y. Reich, Braude, Israel, 2019. **Keynote Speaker**
- [69] Y. Reich, AI or Hey I, am not a user, *Emerging Practices: Design Research and Education Conference (EPC) 2019*, October 14, 2019, Shanghai, China. **Invited Speaker**
- [70] Y. Reich, What did Archimedes teach me about design, *International Conference on The Diverse Worlds of Archimedes*, November 8, 2021, Holon Institute of Technology, Holon, Israel. **Invited Speaker**
- [71] E. Subrahmanian, and Y. Reich, We are not users – dialogues, diversity and design" (MIT Press book, 2019), *13th Design Theory SIG Workshop*, Paris, 27-28 January 2020. **Invited talk**.
- [72] Y. Reich, and E. Subrahmanian, and C. McMahon, Design theory beyond generativity, *14th Design Theory SIG Workshop*, Paris, 25-26 January 2021. **Invited talk**.

- [73] Y. Reich, and E. Subrahmanian, and C. McMahon, Lock-in, fixation and the extinction of technologies: a design-theoretic view of sustainable transitions, *15th Design Theory SIG Workshop*, Paris, 31 January-1 February 2022. **Invited talk**.
- [74] E. Subrahmanian, Y. Reich, and C. McMahon, Design theory and sustainability transition: local contextual exploration with global knowledge integration and sharing, *16th Design Theory SIG Workshop*, Paris, 30-31 January 2023. **Invited talk**.
- [75] Y. Reich, C. McMahon, and E. Subrahmanian, Design Theory in the Designed Avoidance of Multipolar Traps, *17th Design Theory SIG Workshop*, Paris, 28-29 January 2024. **Invited talk**.
- [76] Y. Reich, E. Lavi, and K. Shoham, The value of design theory, *18th Design Theory SIG Workshop*, Paris, 29-30 January 2025, **Invited talk**.
- [77] Y. Reich and J. Peer, Does an antifragile system design itself? An analysis of antifragility and C-K theory, *18th Design Theory SIG Workshop*, Paris, 29-30 January 2025
- [78] Y. Reich, **INCOSE-IL**, September 14, 2022, Herzliya, **Invited Speaker**
- [79] Y. Reich & E. Lavi, The critical value of value-oriented systems engineering, Gordon Conference, January 20, 2023, Herzlia, **Invited talk**.
- [80] Y. Reich, The critical value of value-oriented systems engineering, Gordon Conference, January 20, 2024, Technion, **Invited talk**.

H.5. Papers Presented at Scientific Meetings Published as Proceedings

- [1] Y. Reich and M. Eisenberger, “Optimum shape design of columns for buckling,” in *Steel Structures, Proceedings of Structures Congress '89* (J. S. B. Iffland, ed.), (San Francisco, CA), pp. 677-685, ASCE, 1989.
- [2] M. Eisenberger and Y. Reich, “Buckling of variable cross-section columns,” in *Steel Structures, Proceedings of Structures Congress '89* (J. S. B. Iffland, ed.), (San Francisco, CA), pp. 443-451, ASCE, 1989.
- [3] Y. Reich, “Converging to “Ideal” design knowledge by learning,” in *Proceedings of The First International Workshop on Formal Methods in Engineering Design* (P. A. Fitzhorn, ed.), (Fort Collins, Colorado), pp. 330-349, Colorado State University, 1990.
- [4] M. Eisenberger and Y. Reich, “Knowledge-based model generation for finite element analysis,” in *Proceedings of The 1991 ANSYS Conference & Exhibition*, (Pittsburgh, PA), pp. 1.13-1.20, Swanson Analysis Inc., 1991. **Invited Reprint** in *Finite Element News*, 5:32-38, October 1993.
- [5] Y. Reich, R. Coyne, A. Modi, D. Steier, and E. Subrahmanian, “Learning in design: An EDRC (US) perspective,” in *Artificial Intelligence in Design '91, Proceedings of The First International Conference on Artificial Intelligence in Design*, Edinburgh, UK (J. Gero, ed.), (Oxford, UK), pp. 303-321, Butterworths, 1991.
- [6] Y. Reich, “Designing integrated learning systems for engineering design,” in *Proceedings of The Eight International Workshop on Machine Learning (Evanston, IL)* (L. Birnbaum and G. C. Collins, eds.), (San Mateo, CA), pp. 635-639, Morgan Kaufmann, 1991.
- [7] Y. Reich, “Macro and micro perspectives of multistrategy learning,” in *Proceedings of the First International Workshop on Multistrategy Learning* (R. S. Michalski and G. Tecuci, eds.), (Fairfax, VA), pp. 97-112, Center for Artificial Intelligence, George Mason University, 1991. (Contains details that do not appear in the corresponding book chapter.)
- [8] Y. Reich, “Generation of examples for training a learning design system,” in *Proceedings Computing in Civil Engineering (Dallas, TX)* (B. J. Goodno and J. R. Wright, eds.), (New York, N.Y.), pp. 999-1006, ASCE, 1992.
- [9] Y. Reich, S. Konda, I. Monarch, and E. Subrahmanian, “Participation and design: An extended view,” in *PDC'92: Proceedings of the Participatory Design Conference (Cambridge, MA)* (M. J. Muller, S. Kuhn, and J. A. Meskill, eds.), (Palo Alto, CA), pp. 63-71, Computer Professionals for Social Responsibility, 1992.

- [10] Y. Reich, "The value of design knowledge," in *Proceedings of The Seventh Banff Knowledge Acquisition for Knowledge-Based Systems Workshop* (B. R. Gaines, M. A. Musen, and J. H. Boose, eds.), (Calgary, Alberta, Canada), pp. 21-1-21-20, SRDG Publications, 1992.
- [11] I. A. Monarch, S. L. Konda, S. N. Levy, Y. Reich, E. Subrahmanian, and C. Ulrich, "Shared memory in design: Theory and practice," in *Proceedings of the Invitational Workshop on Social Science Research, Technical Systems and Cooperative Work (Paris, France)*, (Paris, France), pp. 227-241, D'epartment Sciences Humaines et Sociales, CNRS, 1993.
- [12] E. Subrahmanian, R. Coyne, S. L. Konda, S. N. Levy, R. Martin, I. A. Monarch, Y. Reich, and A. W. Westerberg, "Support system for different-time different-place collaboration for concurrent engineering," in *Proceedings of the 2nd IEEE Workshop on Enabling Technologies Infrastructure for Collaborative Enterprises (WET ICE)*, (Los Alamitos, CA), pp. 187-191, IEEE Computer Society Press, 1993.
- [13] Y. Reich, R. Karni, and F. Fournier, "An investigation of machine learning approaches to knowledge extraction from databases," in *Proceedings of The 10th Israeli Symposium on Artificial Intelligence, Computer Vision, and Neural Networks* (R. Basri, U. J. Schild, and Y. Stein, eds.), pp. 119-128, Information Processing Association of Israel, 1993.
- [14] Y. Reich, "What is wrong with CAE and can it be fixed," in *Preprints of Bridging the Generations: An International Workshop on the Future Directions of Computer-Aided Engineering*, (Pittsburgh, PA), Department of Civil Engineering, Carnegie Mellon University, 1994.
- [15] A. W. Westerberg, R. Coyne, D. Cunningham, A. Dutoit, E. Gardner, S. Konda, S. Levy, I. Monarch, R. Patrick, Y. Reich, E. Subrahmanian, M. Terk, M. Thomas, Distributed and collaborative computer-aided environment in process engineering design, in: *Proceedings of ISPE*, 1995.
- [16] Y. Reich, "Computational quality function deployment is knowledge intensive engineering," in *Proceedings of KIC-1: International Workshop on Knowledge Intensive CAD* (T. Tomiyama and M. Mantyla, eds.), pp. 401-419, 1995.
- [17] Y. Reich, "AI-supported quality function deployment," in *Proceedings of the Fourth International Workshop on Artificial Intelligence in Economics and Management*, (Ramat Aviv, Israel), 5p., Faculty of Management, Tel Aviv University, 1996.
- [18] Y. Reich, "Collaborative environments for agile design," in *CIEME: Israel-Germany Bi-National Conference on Computer Integrated Extended Manufacturing Enterprise*, 1996. **Republished** in *The Computer-Integrated Extended Manufacturing Enterprise* (F.-L. Krause, K. Preiss, M. Shpitalni, and A. Shtub, eds.), pp. 101-107, (Bethlehem, PA), Agility Forum, 1997.
- [19] A. W. Westerberg, E. Subrahmanian, Y. Reich, and S. Konda, "Designing the process design process," in *Proceedings of PSESCAPE 97*, 1997. **Invited paper**.
- [20] E. Subrahmanian, Y. Reich, S. L. Konda, A. Dutoit, D. Cunningham, R. Patrick, M. Thomas, and A. W. Westerberg, "The n -dim approach to building design support systems," in *Proceedings of ASME Design Theory and Methodology DTM'97*, (New York, NY), ASME, 1997.
- [21] Y. Reich, V. Bertram, and J. Friesch, "The development of a decision support system for propeller design," in *Proceedings of the 9th International Conference on Computer Applications in Shipbuilding (ICCAS '97)*, 1997.
- [22] Y. Reich, "Effective life-cycle knowledge management," in *Proceedings of The SME Workshop on Engineering Knowledge Management* (Y. Reich, ed.), (Tel Aviv), pp. 2-9, SME Chapter 319, Israel, 1999.
- [23] Y. Reich and O. Shai, "MEMSIS - a MEMS information system," in *Proceedings of CIRP Design Seminar* (M. Shpitalni, ed.), (Haifa, Israel), pp. 193-197, 2000.
- [24] Y. Reich, "Preliminary product design decision-making," in *2000 International Symposium on Modeling of Synthesis*, University of Tokyo, Tokyo, pp. 249-261, 2000. **Invited paper**.

- [25] G. Dobrescu and Y. Reich, "Design of gradual modular platform and variants for a layout product family," in *Proceedings of ICED 2001*, (London), Institution of Mechanical Engineers, 2001.
- [26] E. Levy and Y. Reich, "Dynamically managing product design quality under resource constraints," in *Proceedings of ICED 2001*, (London), Institution of Mechanical Engineers, 2001.
- [27] D. Braha and Y. Reich, "Topological structures for modeling engineering design processes," in *Proceedings of ICED 2001*, (London), Institution of Mechanical Engineers, 2001.
- [28] A. Moshaiov, O. Kaynak, Y. Reich, S. Bar-El, A. Klunover, and L. Akin, "Evaluating groupwork in tele-collaboration - application to socio-mechatronics," in *ITHET 2002*, 2002.
- [29] Y. Reich and A. Ziv-Av, "A comprehensive optimal product concept generation framework," in *Proceedings of the 15th International Conference on Design Theory and Methodology (DTM)*, (New York, NY), ASME, 2003.
- [30] Y. Sered and Y. Reich, "Standardization and modularization driven by minimizing overall process effort," in *Proceedings of the 15th International Conference on Design Theory and Methodology (DTM)*, (New York, NY), ASME, 2003.
- [31] A. Ziv-Av and Y. Reich, "SOS - Subjective Objective System for generating optimal product concepts," in *CD-ROM Proceedings of the 14th International Conference on Engineering Design (ICED)*, The Design Society, 2003.
- [32] A. Schor and Y. Reich, "Improving the robustness of multicriteria decision making," in *CD-ROM Proceedings of the 14th International Conference on Engineering Design (ICED)*, The Design Society, 2003.
- [33] O. Shai and Y. Reich, "Infused design: A brief introduction," in *CD-ROM Proceedings of the 14th International Conference on Engineering Design (ICED)*, The Design Society, 2003.
- [34] Y. Reich, E. Kolberg, and I. Levin, "Designing contexts for learning design," in *Proceedings of Mudd Design Workshop V*, 2005.
- [35] O. Shai, Y. Reich, and D. Rubin, "Infused Creativity: An Approach to Creative System Design," in *Proceedings of the 17th International Conference on Design Theory and Methodology (DTM)*, (New York, NY), ASME, 2005.
- [36] E. Kolberg, Y. Reich, and I. Levin, "Transforming design education by design," in *Proceedings of the 17th International Conference on Design Theory and Methodology (DTM)*, (New York, NY), ASME, 2005.
- [37] Y. Reich, E. Kolberg, and I. Levin, "Designing designers," in *CD-ROM Proceedings of the 15th International Conference on Engineering Design (ICED)*, The Design Society, 2005.
- [38] Y. Reich and A. Ziv-Av, "Robust product concept generation," in *CD-ROM Proceedings of the 15th International Conference on Engineering Design (ICED)*, The Design Society, 2005.
- [39] E. Subrahmanian and Y. Reich, Advancing Problem Definition and Concept Generation for Improved Product Life Cycle, *International Conference on Trends in Product Life Cycle, Modeling, Simulation and Synthesis, PLMSS-2006*, 18-20 December, Bangalore, India, 2006. **Invited paper**.
- [40] A. Karniel and Y. Reich, "Simulating Design Processes with self-iteration activities based on DSM planning," in *proceedings of the International Conference on Systems Engineering and Modeling - ICSEM'07*, Haifa, 2007.
- [41] A. Karniel and Y. Reich, "Managing dynamic new product development processes," *CD proceedings of the INCOSE International Symposium (INCOSE 2007)*, San Diego, CA, 2007.
- [42] E. Kolberg, Y. Reich, and I. Levin, "Design of design methodology for autonomous robots," *CD proceedings, RoboCup 2007 Symposium*, Atlanta, 2007.
- [43] E. Kolberg, Y. Reich, and I. Levin, Express engineering change management, in *CD-ROM Proceedings of the 16th International Conference on Engineering Design (ICED)*, The Design Society, 2007.

- [44] Reich, Y., Ullmann, G., Van der Loos, M., Leifer, L., Perceptions of coaching in product development teams, in *CDROM Proceedings of the 16th International Conference on Engineering Design (ICED)*, The Design Society, 2007.
- [45] A. Karniel and Y. Reich, Coherent interpretation of DSM plan to PDP simulation, in *CD-ROM Proceedings of the 16th International Conference on Engineering Design (ICED)*, The Design Society, 2007.
- [46] Y. Reich, "Preventing Breakthroughs from Breakdowns," *Proceedings of the 9th Biennial ASME Conference on Engineering Systems Design and Analysis ESDA2008*, Haifa, Israel, 2008.
- [47] Y. Reich, O. Shai, E. Subrahmanian, A. Hatchuel, P. Le Masson, "The interplay between design and mathematics: Introduction to bootstrapping effects," *Proceedings of the 9th Biennial ASME Conference on Engineering Systems Design and Analysis ESDA2008*, Haifa, Israel, 2008.
- [48] O. Shai, Y. Reich, A. Hatchuel, E. Subrahmanian, Creativity theories and scientific discovery: a study of C-K Theory and Infused Design, *International Conference on Engineering Design, ICED'09*, Stanford, CA, 2009. **Outstanding paper award.**
- [49] A. Karniel and Y. Reich, Statistical analysis of process simulations, *International Conference on Engineering Design, ICED'09*, Stanford, CA, 2009.
- [50] S. Menachem, Y. Reich, Improving effectiveness of agile development, *International Conference on Engineering Design, ICED'09*, Stanford, CA, 2009.
- [51] O. Shai, Y. Reich, Inventing a new method in statics through knowledge in kinematics, *Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE*, San Diego, CA 2009.
- [52] Rosenstein, D. Reich, Y., Hierarchical Concept Generation by SOS, *International Conference on Engineering Design, ICED'11*, Copenhagen, Denmark, 2011.
- [53] Hatchuel, A., Le Masson, P., Reich, Y., Weil, B., A systematic approach of design theories using generativeness and robustness, *International Conference on Engineering Design, ICED'11*, Copenhagen, Denmark, 2011.
- [54] Karniel, A. Reich, Y., Rules for implementing dynamic changes in DSM-based plans, *International Conference on Engineering Design, ICED'11*, Copenhagen, Denmark, 2011.
- [55] Shai, O. Reich, Y., Understanding engineering systems through the engineering knowledge genome: structural genes of systems topologies, *International Conference on Engineering Design, ICED'11*, Copenhagen, Denmark, 2011.
- [56] Subrahmanian, E., Reich, Y., Smulders, F., Meijer, S.A., "Designing: Insights from Weaving Theories of Cognition and Design Theories, In eProceesings *International Conference on Engineering Design, ICED'11*, Copenhagen, Denmark, 2011.
- [57] Subrahmanian, E., Reich, Y., Smulders, F., Meijer, S.A., Design as a synthesis of spaces: using the P-S framework, *Proceedings of IASDR2011, the 4th World Conference in Design Research*, Delft, The Netherlands, 2011.
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