

Erella Eisenstadt-Matalon

Senior lecturer

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Work address:

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Academic Education:

2019 - Ph.D Mechanical Engineering, Tel-Aviv University.

Dissertation title: *Co-evolving Rationalizable Strategies for Zero-Sum Multi-objective Games.*

1992 - M.Sc Mechanical Engineering, Technion, Israel.

Thesis: *Identification of Vibrating Structures via Measurements Corrupted by Noise.*

1989 - B.Sc Mechanical Engineering, Cum Laude, Technion, Israel.

Research interest

- Multi objective optimization
- Evolutionary optimization
- Dynamics and vibration

Academic appointments

2020-present Senior lecturer, ORT Braude College, Department of Mechanical Engineering.

Subjects: Control Systems, Integrated Systems Design, Theory of Vibration
Kinematics & Dynamics, Solid Mechanics.

1997- 2019 Senior teacher, ORT Braude College, Department of Mechanical Engineering.

1998-1999 Lecturer, The Institute of Marine Training.

Subjects: Control systems for Marine Chief Engineers, preparation for the Israel
Labor Ministry audits.

Subjects: Switching theory & digital systems, for Junior Staff.

1995-1996 Lecturer, Open University.

Subjects: Physics.

1990-1992 Teaching assistance, Mechanical Engineering Faculty. Technion.

Subjects: Control Systems, Elasticity, Measurements Systems & Sensors.

Professional experience:

- 1996-1997 **Dimar** - Mechanical engineer, mechanical design of cutting tools for wood processing.
Responsibilities: design of wood cutting tools per customers' request.
Head of ISO 9000 committees.
- 1992-1995 **Hanita Coatings** - Process manager for metallization, coating
Laminating & slitting of polymeric films.
Responsibilities: Design of coating equipment upgrades.
Documentation of products & processes. Member of the steering team for the qualification of ISO 9000. Member of R&D projects team.
- 1989-1990 **Elscint**- Mechanical engineer in the M.R.I department,
Responsibilities: Mechanical design with special materials considering the strong magnetic field.

Additional academic activities:

- 2004 Administrative Assistance, Mechanical Engineering Department, ORT Braude College.
- 2003 - Present 1st year students' counselor, in M.E department, ORT Braude College.
- 2005 - Present Developed & built a website (Clickit3) for the following subjects: Theory of vibration, Dynamics, Kinematics, Control systems for Bio-technology, Control systems for IEM and Solid mechanics.
- 2000-2001 Ort Braude representative in a delegation of the Israeli Labor Ministry to Germany, for the development of a new program of teaching internet integrated control systems for practical engineers.
- 2005 Scientific advisor for the preparation of a high school textbook "Introduction to Control Systems", Ort Press, written by Rafael Gal & Nisim Ben- Or.
- 2004 - Present Technical Education Center team member in writing Control Systems Mechanical Engineering Matriculation test for Technicians & Practical Engineering students.
- 2007 - 2010 Ministry of Education steering committee team member for teaching practical engineers.
- 2007 - 2008 Counselor to outstanding students" of M.E department that take part in the "Excellence Project", ORT Braude College.
- 2011 – 2015 Marie Curie researcher in FP7 program of the European community.

Refereed papers

1. **Eisenstadt, E.**, & Moshaiov, A. Mutual Rationalizability in Vector-Payoff Games. *In International Conference on Evolutionary Multi-Criterion Optimization*, pp. 593-604. Springer, Cham, 2019.
2. **Eisenstadt, E.**, & Moshaiov, A. (2018). Decision-making in non-cooperative games with conflicting self-objectives. *Journal of Multi-Criteria Decision Analysis*, 25(5-6), pp.130-141.
3. Harel, M., **Matalon-Eisenstadt, E.**, & Moshaiov, A. (2017). *Solving Multi-objective Games using A-priori Auxiliary Criteria*. In Evolutionary Computation (CEC), 2017 IEEE Congress on (pp. 1428–1435). IEEE.
4. **Eisenstadt, E.** & Moshaiov, A., 2017. Novel Solution Approach for Multi-objective Attack-Defense Cyber Games with Unknown Utilities of the Opponent. *IEEE Transactions on Emerging Topics in Computational Intelligence*.
5. **Eisenstadt, E.**, Moshaiov, A. & Avigad, G., 2016. The Competing Travelling Salespersons Problem under Multi-criteria. In *Proceedings of the 14th Int. Conf. on Parallel Problem Solving from Nature, PPSN 2016*. pp. 463–472.
6. **Eisenstadt, E.**, Moshaiov, A. & Avigad, G., 2015. Co-evolution of Strategies for Multi-objective Games under Postponed Objective Preferences. In *Computational Intelligence and Games (CIG), 2015 IEEE Conference on*. IEEE, pp. 461--468.
7. Avigad G., **Eisenstadt E.**, & Schuetze, O., (2012). *Handling Changes of Performance-Requirements in Multi Objective Problems*. *Journal of Engineering Design*, 23(8):597-617.
8. Avigad G., **Eisenstadt E.**, Goldvard, A., and Salomon, S., (2012). *Transient Responses' Optimization by Means of Set-based Multi-Objective Evolution*. *Engineering Optimization*, 44(4):407-426.
9. Avigad G., **Eisenstadt E.**, Valery Y. Glizer, (2012). *Evolving a Pareto Front for an Optimal Bi-Objective Robust Interception Problem with Imperfect Information*. *A Bridge Between Probability, Set Oriented Numerics, and Evolutionary Computation II in Advances in Intelligent Systems and Computing 175*, pp: 121-135. Springer, 2012.
10. Avigad G., **Eisenstadt E.**, Shaul Salomon, and Frederico Gadelha Guimares, (2012). *Evolution of Contours for Topology Optimization*. *A Bridge Between Probability, Set*

Oriented Numerics, and Evolutionary Computation II in *Advances in Intelligent Systems and Computing* 175, pp: 397-412. Springer, 2012.

11. Avigad G., **Eisenstadt E.**, & Weiss M., (2011). *Trajectory' Planning for Multi UUVs under Reciprocal Constraints*. *Engineering Optimization*, 43(12):1331-1350.
12. Avigad G. & **Eisenstadt E.** ,(2011). *The Multi-Single Objective Problem and its Solution by way of Evolutionary Algorithms*. *Research in Engineering Design* 22(2):87–102.
13. Avigad, G., **Eisenstadt E.**, & Shnits B., (2011). *Supporting the selection of robust engineering concepts under suppliers related uncertainties*. *Journal of Engineering Design*, 22(8): 543-563.
14. Avigad G., **Eisenstadt, E.**, & Schuetze, O., (2011). *Design and Evolution of Robust-to-Market-Changes Sets of Solutions to Multi Objective Problems*. *Journal of Engineering Design*, DOI: 10.1080/09544828.2011.630656, November 2011.
15. Avigad, G., **Eisenstadt E.**, & Goldvard, A., (2010). *Pareto Layer: Its Formulation and its Search by way of Evolutionary Multi-Objective Optimization*. *Engineering Optimization*, 42(5): 453-470.
16. Avigad G., **Eisenstadt E.**, & Weiss M. (2010). *The Optimization versus Survival Problem and its solution by an Evolutionary Multi Objective Algorithm*. *Lecture Notes In Computer Science LNCS 6457*, pp: 494-503. Springer, 2010.

Other conference proceedings:

1. **Eisenstadt E.**, Moshaiov A., *Multi-criteria Decision Making for Unmanned Systems based on Game Theory*. In the proceedings of Israeli Autonomous and Unmanned Systems Conference, 2015.
2. **Eisenstadt E.**, Moshaiov A, Avigad G., *Co-Evolutionary Algorithms for Solving Multi Objectives Games*. In the proceedings of the 33rd Israeli Conference on Mechanical Engineering (ICME) 2015.
3. **Eisenstadt E.**, Moshaiov A., , Avigad G., *Solution Approaches for Multi-Objective Games with Different Attitudes toward Objectives Preference*. In the proceedings of the 11-th ORT Braude College Interdisciplinary Research Conference, Hagoshrim, October 2015.
4. Avigad G., **Eisenstadt E.**, & Glizer V.Y., *New Horizons for Multi-objective Games*. In the proceedings of the 8-th ORT Braude College Interdisciplinary Research Conference, Akko, October 2012.

5. Avigad G., **Eisenstadt E.**, Salomon S., & Guimares G. F., *Multi Modal Optimization for Topology Design Use by Evolving Contours*. In the proceedings of the 8-th ORT Braude College Interdisciplinary Research Conference, Akko, October 2012.
6. Avigad G., **Eisenstadt E.**, Oliver Schuetze. *Design and Evolution of Robust-to-Market-Changes Sets of Solutions to Multi Objective Problems*. In the proceedings of the 7-th ORT Braude College Interdisciplinary Research Conference, Kfar Blum, September 2011.
7. Avigad G., **Eisenstadt E.**, Oliver Schuetze. *Design and Evolution of Robust-to-Market-Changes Sets of Solutions to Multi Objective Problems*. In the proceedings of the 7-th ORT Braude College Interdisciplinary Research Conference, Kfar Blum, September 2011.
8. Avigad G., **Eisenstadt, E.**, and Weiss M., *The Pareto Layer for Multi Objective Games and its Search by Set-Based Evolutionary Multi Objective Optimization*. In the proceedings of the 7-th ORT Braude College Interdisciplinary Research Conference, Kfar Blum, September 2011.
9. Avigad G., **Eisenstadt, E.**, and Weiss M., *Optimizing Multi UUVs Trajectories Subjected to Reciprocal Constraints*. In the proceedings of the 6-th ORT Braude College Interdisciplinary Research Conference, Haifa, October 2010.
10. Avigad G., **Eisenstadt E.**, Goldvard A., Salomon S., *Optimization by Means of Statewise Set Based Multi-Objective Evolution*. In the proceedings of the 6-th ORT Braude College Interdisciplinary Research Conference, Haifa, October 2010.
11. Avigad G., **Eisenstadt E.**, Schutze O. *Set-Based Robustness to Market Changes*. In the proceedings of the 6-th ORT Braude College Interdisciplinary Research Conference, Haifa, October 2010.
12. Avigad G., and **Eisenstadt E.** *Considering supply chains within conceptual design*. In the proceedings of the 5-th ORT Braude College Interdisciplinary Research Conference, Naharia, October 2009.
13. Avigad G., and **Eisenstadt E.**, *Concept selection in the presence of uncertainties about supply chains*. In the proceedings of the 4-th ORT Braude College Interdisciplinary Research Conference, Nazareth, October 2008.