R E S U M E
10 December 2025

1. PERSONAL DETAILS

Full Name: **Barak Fishbain**
Identity No: 031985799
Date and place of birth: 25/1/1975, Haifa, Israel
Marital status: Married + 3
Phone numbers: +972-4-8293177 (Office)
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2. ACADEMIC DEGREES

B.EMS[*]	2022, Faculty of life sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
PhD	2009, School of Electrical Engineering, Faculty of Engineering, Tel-Aviv University, Tel-Aviv, Israel. Advisor: Professor L.P. Yaroslavsky (In Memoriam)
MSc	2004, School of Electrical Engineering, Faculty of Engineering, Tel-Aviv University, Tel-Aviv, Israel. Advisor: Professor L.P. Yaroslavsky (In Memoriam)
BSc	1997, Faculty of Electrical Engineering, Technion - Israel Institute of Technology, Haifa, Israel

[*]B.EMS - Bachelor's degree in emergency medical services

3. ACADEMIC APPOINTMENTS

Oct 2018 – Present	Associate Professor, Division of Environmental, Water and Agriculture Engineering, Faculty of Civil and Environmental Engineering, Technion - Israel Institute of Technology, Haifa, Israel
Oct 2011 – Oct 2018	Assistant Professor, Division of Environmental, Water and Agriculture Engineering, Faculty of Civil and Environmental Engineering, Technion - Israel Institute of Technology, Haifa, Israel
Oct 2015 – Sep 2016	Faculty, Team Project Chair, International Space University
Oct 2010 – Oct 2011	Associate Director, Integrated Media Systems Center (IMSC), Viterbi School of Engineering, University of Southern California, Los-Angeles, CA, USA
Oct 2008 – Feb 2011	Postdoctoral Fellow, Department of Industrial Engineering and Operations Research, University of California, Berkeley, CA, USA. Advisor: Professor D.S. Hochbaum

4. PROFESSIONAL EXPERIENCE (outside academia)

2024 – Present	Chief Intelligence Officer, National Rescue Unit, Home Front Command, Israeli Defense Forces (In reserves)
2022 – Present	Advanced Paramedic, Intensive Care Team Leader, Magen-David Adom, Israel National Emergency Medicine Services
Oct 2005 – Oct 2008	Research Associate, National Simulations & Electronic Warfare Laboratory, Rafael-Advanced Defense Systems, Haifa, Israel

Sep 1997 – Oct 2005	Research Officer, Intelligence Corps R&D Unit (Military P.O.B 02470), Israeli Defense Forces
	Prime Minister Citation, Sep 2005
	Major General Citation (Intelligence Corps), Jan 2005
	Rank: Major

5. RESEARCH INTERESTS

My research field is **Environmental Informatics (Enviromatics)**, integrating *Artificial Intelligence* and *Machine Learning* **with** *physics, chemistry,* and *biology* for conducting comprehensive analyses of real-world built and natural environments.

6. TEACHING EXPERIENCE

Technion – Israel Institute of Technology:	2012 – Present, **Statistics**, Lecturer in Charge (014003, undergraduate)
	2015, Excellence Teaching award (highest 12%)
	2017, Excellence Teaching award (highest 12%)
	2018, A. Arenson Excellence in Teaching Award for young Faculty.
	2018, Excellence Teaching award (highest 12%)
	2019, Excellence Teaching award (highest 4%)
	2022, Excellence Teaching award (highest 12%)
	2012 – Present, **Advanced Topics in Statistics**, Lecturer in Charge (019007, graduate)
Tel-Aviv University:	2000 – 2008, **Digital Image Processing, Applications**, Lecturer (0510.7211 graduate)
The Israeli Defense Forces:	2000, **Cyber and Software Engineering**, Commander, *course development*, Intelligence corps elite training program-חמ״ן תלפיות

7. TECHNION ACTIVITIES

2019 – Present	Member, Academic Board, Applied Mathematics Interdisciplinary Graduate Program
2019 – Present	Member, Technion Computation Committee

8. DEPARTMENTAL ACTIVITIES

2019 – 2021	Chair, Division of Environmental, Water and Agriculture Engineering Graduate Committee
2019 – 2023	Member, Faculty of Civil and Environmental Engineering Graduate Committee
2017 – 2019	Academic Secretary, Faculty of Civil and Environmental Engineering
2015 – 2017	Member, Division of Environmental, Water and Agriculture Engineering Undergraduate Studies Committee
2013 – 2017	Academic Secretary, Division of Environmental, Water and Agriculture Engineering

9. PUBLIC PROFESSIONAL ACTIVITIES

Jun 2021 – Present	**Associate Editor**, *Journal of Environmental Modeling and Software* (IF 4.8, Q1 – Environmental Engineering)
Aug 2018 – Present	**Associate Editor**, *Journal of Water Resources Planning and Management*, (IF 3, Q1 – Water Science and Technology)
Oct 2019 – Oct 2020	**Chair**, Emerging and Innovative Technologies Committee (EITC), Environmental & Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE)
Oct 2018 – Oct 2019	**Vice Chair**, Emerging and Innovative Technologies Committee (EITC), Environmental & Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE)
Oct 2017 – Oct 2018	**Secretary**, Emerging and Innovative Technologies Committee (EITC), Environmental & Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE)
Jul 2017 – Aug 2020	**Management Committee**, COST Action CA16202, International Network to Encourage the Use of Monitoring and Forecasting Dust Products
Jul 2017 – Jul 2020	**Executive Board**, Israel Society of Ecology and Environmental Sciences.
May 2017 – Jun 2021	**Member**, Working Group 5.11, Computers and Environment, International Federation for Information Processing
Oct 2016 – Oct 2023	**Associate Editor**, Journal of Mathematical Problems in Engineering
Nov 2010 – Apr 2020	**Associate Editor**, *Real-time Image Processing* (IF 2.9, Q2 – Information Systems)
Nov 2010 – Apr 2020	**Advisory Board**, *Real-time Image Processing* (IF 2.9, Q2 – Information Systems)
Jan 2010 – Nov 2010	**Guest Editor**, Journal of Real-time Image Processing
Jun 2010	**Review Panel**, National Science Foundation (NSF)
Jun 2009	**Review Panel**, National Science Foundation (NSF)
Reviewer:	Water Research; Science of the Total Environment; Journal of Water Resources Planning and Management; Mathematical Problems in Engineering; Scientific Reports; Urban Water; Journal of Operations Research; Annals of Operations Research; European Journal of Transport and Infrastructure Research; IEEE Trans. on Circuits and Systems for Video Technology; Optics Letters, Optical Society of America; Journal of Optical Society of America A (JOSA A); Journal of Real-time Image Processing; Journal of Computing in Civil Engineering

10. MEMBERSHIP IN PROFESSIONAL SOCIETIES

Member, Environmental and Water Research Institute (EWRI)
Associate Member, American Society of Civil Engineers (ASCE)
Member, Operations Research Society of Israel (ORSIS)
Member, International Environmental Modelling & Software Society (iEMSs)

11. FELLOWSHIPS, AWARDS AND HONORS

Jun 2018   **A. Arenson Excellence in Teaching Award for young Faculty,** A. Arenson Ltd. General Contractors, Haifa, Israel

Jun 2018   **iEMSs 2018 Student Scholarship Award**, *A. Nebenzal* and **Barak Fishbain**, "Long Term Forecasting of Nitrogen Dioxide in Metropolitan Areas Using the Discrete Time Markov Model", *9th International Congress on Environmental Modelling and Software*, June 24-28, Fort Collins, CO, USA

Jun 2018   **iEMSs 2018 Best Student Paper Award 3rd place**, *A. Nebenzal* and **Barak Fishbain**, "Long Term Forecasting of Nitrogen Dioxide in Metropolitan Areas Using the Discrete Time Markov Model", *9th International Congress on Environmental Modelling and Software*, June 24-28, Fort Collins, CO, USA

May 2017   **Goldberg Excellence in Research Award,** Alexander Goldberg Foundation, Technion-Israel Institute of Technology

Jun 2016   **Best Poster Award**: *T. Yacobi*, Y. Etzion and **B. Fishbain**, "Assessing PM ambient levels from a set of still images", *2016 Annual convention of the Israel Society of Ecology and Environmental Sciences*, Tel-Aviv, Israel, June 21-23, 2016

Jun 2016   **Best Poster Award Runner-up**: *A. Nebenzal* and **B. Fishbain**, "Long Term Forecasting of NO2 in Metropolitan Areas Using the Discrete Time Markov Model", *2016 Annual convention of the Israel Society of Ecology and Environmental Sciences*, Tel-Aviv, Israel, June 21-23, 2016

Feb 2015   **Best Poster Award**: *U. Lerner*, *T. Yacobi*, *I. Levy*, *S.A. Moltchanov*, T. Cole-Hunter and **B. Fishbain**, "The effect of ego-motion on environmental monitoring", *EPScon conference*, Weizmann Institute, Rehovot, Israel, 2015

Jul 2012   **Most Distinguished Program Graduate**, US Department of Homeland Security & US National Science Foundation (NSF)

Oct 2008   **Research Scholar Excellence Award**, Ran Naor Foundation

Dec 2007   **Research Student Excellence Award**, Applied Materials

Nov 2007   **Rosenberg Excellence Award**, Faculty of Engineering, Tel-Aviv University

Nov 2007   Israel Ministry of Science and Technology **PhD Research Fellowship**

12. GRADUATE STUDENTS

Click the reference # to get to the manuscript itself.

Completed PhD theses

06/2016 [1]   Gabriel Raviv, Civil and Environmental Engineering, *Modeling of Near Misses Related to Crane Work at Construction Sites and their Safety Risk Potential*, with Aviad Shapira (Shapira as primary advisor, Fishbain as secondary advisor) (number of joint publications in journals – 2; References #18,19)

01/2017   Uri Lerner, Environmental Sciences, *Mathematical Data Analysis Methods for Air-Quality Wireless Distributed Environmental Sensor Networks* (7; #11,12,14,20,21,28,32)

06/2017   Noa Avni, Civil and Environmental Engineering, *Algorithms for development and management of regional water systems under multiple uncertainties*, with

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[1] Graduation Year

	Uri Shamir (Fishbain as primary advisor, Shamir as secondary advisor) (1; #13)
07/2018	Yaela N. Golumbic, Education in Science and Technology, *Public Participation in Air Quality Research in Haifa: Theory into Practice*, with Ayelet Baram-Tsabari (Baram-Tsabari as primary advisor, Fishbain as secondary advisor) (4; #20,23,29,35)
02/2019	Asaf Nebenzal, Applied Mathematics, *Mathematical methods for Generating Accurate Dense Spatio-Temporal Maps of Air Pollutants from Sparse Sensing* (3; #26,33,37)
09/2020	Tehila Asheri, Civil and Environmental Engineering, *Data Driven Algorithms for Early Water Contamination in Water Supply Systems* (2; #25,30)
11/2024	Noam Ginio, Civil and Environmental Engineering, *Reconstruction of sea level state by polarimetric reflection measurements and machine learning methodology*, with Dan Liberson (Fishbain and primary advisor, Liberzon as secondary advisor) (3; #49,54,57)

Completed MSc theses

01/2015	Ella Levi, Civil and Environmental Engineering, *Online Oxidization of low concentrations of CP for enhancing bio sensors for early detection in drinking water*
10/2015	Levi Frolich, Civil and Environmental Engineering, *Spectral Methods for Analysis of Bacteria Counts in Water Wells* (1; #22)
12/2015	Daphna Yogev, Civil and Environmental Engineering, *Identification of water leakage using consumption patterns of domestic end users*
12/2015	Oren Rubinstein, Transportation Engineering, *Video based Identification and analysis of High-way traffic flow models*
05/2017	Shai Moshenberg, Civil and Environmental Engineering, *Imputation of missing air pollution data using spectral methods* (1; #14)
09/2017	Tamar Yacobi, Civil and Environmental Engineering, *Development and Utilization of New Methods for Urban Air-Pollution Monitoring* (1; #12)
02/2019	Dana Drahler, Civil and Environmental Engineering, *Dense PM Pollution Maps resulted from near quarries' operations* (Contributed Talk #32)
04/2021	Uria Luzon, Agricultural Engineering, *Spatiotemporal data-driven models for precise irrigation*
11/2021	Or Vernik, Applied Mathematics, *Mathematical estimation of particulate air pollution levels by multi angle imaging* (1; #43)
07/2022	Ziv Mano, Civil and Environmental Engineering, *Information theory approach to optimal deployment of air quality sensors in the open environment* (4; #27,31,45,48)
06/2024	Avitay Getelman, Civil and Environmental Engineering, *Machine Learning Methods for Improving Complex Physicochemical Air Pollution Models* (1; #58)
11/2024	Lana Khalifa, Civil and Environmental Engineering, *Machine Educating Approach for Finding Victims in Flash Flooding Events* (Contributed Talks #45)

PhD theses in progress

10/2019 [2] Alon Feldman, Applied Mathematics, *Estimating air pollution from traffic video sequences* (after candidacy exam) (1; #51)

10/2023 Stav Cohen, Data Science, *Optimization of complex human involved systems*, with Mashor Housh (Fishbain and primary advisor, Housh as secondary advisor) (1; #55)

10/2024 Dror Etlinger-Levy, Civil and Environmental Engineering, *Inferring fish welfare from auditorial sounds*.

MSc theses in progress

10/2022 Ofir Nosh, Construction Engineering, *Algorithms for Post-Earthquake Structure Health Analysis* with Oren Lavan (Lavan as primary advisor, Fishbain as secondary advisor)

10/2024 Ofek Aloni, Applied Mathematics, *Data-driven Sewer Asset Management* (1; #53)

10/2024 Nurit Klimovitsky, Data Science, *Data-driven Sewer Asset Management*

10/2024 Leeel Yehezkel, Civil and Environmental Engineering, *Physics Informed Machine Learning Approach for Acquiring Quickly and Efficiently a Complete Picture of the Damage in an Earthquake Event Through Automated Site Triage Assessments*

13. SPONSORED LONG-TERM VISITORS AND POST-DOCTORAL ASSOCIATES

Post-Doctoral Associates

2012 - 2014 Ilan Levy, *Traffic Air Pollution Exposure Assessment in an Urban Environment through Wireless Distributed Environmental Sensor Network* (funded by the Israeli Health Foundation) (4; #11,12,24,56)

2014 - 2016 Sharon Molchanov, *CITI Sense - Development of sensor-based Citizens' Observatory Community for improving quality of life in cities* (funded by the European Commission, Directorate General for Research & Innovation, 7th Framework Program, FP7) (1; #12)

Long Term Visitors

2018 - Present Shai Kendler, *Real-time Event Analysis Algorithms for Effective Multi-Source Environmental Monitoring* (funded by the German Federal Ministry of Education and Research (BMBF), MEKOROT, Israel National Water Company and Ministry of Agriculture and Rural Development) (13; #27,31,33,36,37,38,39,42,44,45,48,51,52)

14. RESEARCH GRANTS

2025 Israeli Council of Higher Education, *Israel Center for Digital Agriculture*, 16,000,000 (five yrs.), Naftali Lazarovitch, Elad Levintal, Dilia Kool, Oz Kira, Tarin Paz-Kagan, Shimon Rachmilevitch, Raphael Linker, Alex Furman, Yael Dubowski, Fadi Kizel, **Barak Fishbain (Co-PI)**, Menachem Moshelion, Tamar Friedlander, Matan Gavish, David Helman, and Yair Mau

2024 German Federal Ministry of Education and Research (BMBF), *DASAM: Data-driven Sewer Asset Management in Germany and Israel*, 672,398 Euros (three yrs.), **Barak Fishbain (PI),** Eran Friedler, and Sabrina Spatari - Technion; Nicolas Caradot, David Steffelbauer - KWB Kompetenzzentrum Wasser Berlin gGmbH, Berliner Wasserbetriebe

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[2] Starting Year

2024   Israeli Ministry of Science and Technology, *Combined digital twin and artificial intelligence approach for effective and accurate area damage assessment in an earthquake event*, 296,700 NIS (two yrs.), **Barak Fishbian (PI)** and Oren Lavan - Technion

2023   The Israel Data Science Initiative, *Deep Learning Approach for Country Scale High-Resolution Air Pollution Modeling*, 40,000 NIS (one yr.), **Barak Fishbain (PI)**

2023   Israeli Ministry of Science and Technology, *Sound fish welfare-Inferring fish welfare from the sounds they make*, 400,000 NIS (three yrs.), Shai Tal - The Israeli National Institute of Aquaculture and **Barak Fishbain (Co-PI)**

2023   Water Authority, *The combination of hydraulic models and machine learning methodologies for identification of cyber-attacks on water network infrastructure*, 312,000 NIS (three yrs.), **Barak Fishbain (PI)** and Mashor Housh - University of Haifa

2019   Ministry of Science & Technology, *Heterogeneous robotic team for monitoring and detection in post-disaster catastrophic events*, 1,200,000 NIS (3 yrs.), **Barak Fishbain (PI)** and Amir Degani - Technion

2019   The Office of the Chief Scientist Foundation, Ministry of Agriculture and Rural Development, *Early pain detection in cows from physiological sensors,* 210,000 NIS (3 yrs.), Yael Salzer - Agriculture Research Organization, Volcani Center and **Barak Fishbain (Co-PI)**

2017   Ministry of Environmental Protection, *Characterization, distribution and source apportionment of Ambient Ultrafine Particles in Haifa Bay Area*, 350,000 NIS (three yrs.), David Broday, Yael Dubowski and **Barak Fishbain (Co-PI)** - Technion

2013   The German Israeli Foundation for Scientific Research and Development (GIF), *Real-time Event Analysis Algorithms for Effective Multi-Source Environmental Monitoring*, 38,000 Euros (1 yr.), **Barak Fishbain (PI)**

2013   Cornel-Tech Foundation, *Adaptive Automatic Flow Control in Transportation Facilities*, 25,600 USD (1 yr.), **Barak Fishbain (PI)**, Per-Olof Gutman – Technion, and Eilyan Bitar, Cornel University

2012   Environmental Health Foundation (EHF), *Traffic Air Pollution Exposure Assessment in an Urban Environment through Wireless Distributed Environmental Sensor Network*, 50,000 USD (3 yrs.), **Barak Fishbain (PI)** and Ilan Levi-The Israeli Ministry of Environmental Protection

2012   European Commission, Directorate General for Research & Innovation, 7th Framework Program (FP7), *CITI Sense - Development of sensor-based Citizens' Observatory Community for improving quality of life in cities*, 260,000 Euros (four yrs.), David Broday and **Barak Fishbain (Co-PI)** - Technion

2012   Technion-Forschungszentrum Jülich-RWTH Aachen University umbrella cooperation Program, 9,000 Euros (one year), *Carbon based Sensory Textile Reinforced Concrete for Smart Structures*, Oded Rebinovich, Yiska Goldfeld, **Barak Fishbain (Co-PI)**, and Thomas Gries, RWTH Aachen University, Germany

Industry

2018   MEKOROT, Israel National Water Company, *Algorithms for Early Contamination Detection in Water Supply Systems*, 270,000 NIS (three yrs.), **Barak Fishbian (PI)**

2014   MEKOROT, Israel National Water Company, *Algorithms for Early Contamination Detection in Water Supply Systems*, 140,000 NIS (four yrs.), **Barak Fishbain (PI)**

2011   Intel, *Real-time Traffic Monitoring through Traffic Videos*, 20,000 USD (1 yr.), **Barak Fishbain (PI)**

15. PUBLICATIONS
Click manuscripts' titles to get to the paper itself.
Advised students and postdocs are in italic.

† (Marked with a dagger) Students that were not officially advised by Fishbain. Fishbain was involved in guidance in the study described in the specific manuscript.

Impact factor is taken from the journal's own report and journal's quantile is extracted from The SCImago Journal & Country Rank (https://www.scimagojr.com).

15.1 Theses
1. **B. Fishbain**, *Data Fusion Methods for Fusing Thermal and Visual Range Video Sequences*, M.Sc. Thesis, Tel-Aviv University, 06/2004. Advisor: Professor L.P. Yaroslavsky (In Memoriam)
2. **B. Fishbain**, *Real Time Methods for Restoration, Enhancement and Analysis of Videos with Applications in Intelligent Transportation Systems*, PhD Thesis, Tel-Aviv University, 06/2008. Advisors: Professor L.P. Yaroslavsky (In Memoriam)

Refereed papers in professional journals
Published papers
1. I.A. Ideses, L.P. Yaroslavsky, and **B. Fishbain**, "Real-Time 2D to 3D Video Conversion", *Journal of Real-Time Image Processing*, 2(1):3-9, 2007. IF 2.9. **Q2**.
2. **B. Fishbain**, L.P. Yaroslavsky, and I.A. Ideses "Real-time stabilization of long-range observation system turbulent video", *Journal of Real- Time Image Processing*, 2(1):11-22, 2007. IF 2.9. **Q2**.
3. L.P. Yaroslavsky, **B. Fishbain**, G. Shabat, and I.A. Ideses, "Super-resolution in turbulent videos: making profit from damage", *Optics Letters*, 32(20):3038-3040, 2007. IF 3.1. **Q1**.
4. **B. Fishbain**, L.P. Yaroslavsky, and I.A. Ideses, "Spatial, Temporal, and Inter-channel Image Data Fusion for Long-Distance Terrestrial Observation Systems", *Advances in Optical Technologies*, Vol. 2008, Article ID 546808, 2008.
5. **B. Fishbain**, I.A. Ideses, G.Shabat, B.G. Salomon, and L.P. Yaroslavsky, "Superresolution in color videos acquired through turbulent media", *Optics Letters*, 34(5):587-589, 2009. IF 3.1. **Q1**.
6. L.P. Yaroslavsky, G. Shabat, I.A. Ideses, B.G. Salomon, and **B. Fishbain**, "Non-uniform signal sampling, signal and image recovery from sparse data and the discrete sampling theorem", *Journal of Optical Society of America A.*, 26(3):566-575, 2009. IF 1.4. **Q2**.
7. J. Griswold†, **B. Fishbain**, D.R. Ragland, and S. Washington, "Visual assessment of pedestrian crashes", *Accident Analysis and Prevention*, 43(1):301-306, 2011. IF 5.7. **Q1**.
8. D.S. Hochbaum and **B. Fishbain**, "Nuclear Threat Detection with Mobile Distributed Sensor Networks", *Annals of Operations Research*, 187(1):45-63, 2011. IF 4.4. **Q1**.
9. **B. Fishbain** and O. Grembeck†, "A Multi-Dimensional Clustering Algorithm for Studying Fatal Road Crashes", Journal of Transportation and Statistics, 10(1):79-100, 2013.
10. Y.T. Yang†, **B. Fishbain**, D.S. Hochbaum, E.B. Norman, and E. Swanberg, "The Supervised Normalized Cut Method for Detecting, Classifying, and Identifying Special Nuclear Materials", INFORMS Journal on Computing, 26(1):45-58, 2014. IF 2.3. **Q1**.
11. *S. Molchanov*, *I. Levy*, Y. Etzion, *U. Lerner*, D.M. Broday, and **B. Fishbain**, "On the feasibility of measuring urban air-pollution by wireless distributed sensor networks", *Science of the Total Environment*, 502:537-547, 2015. IF 8.2. **Q1**.
12. *U. Lerner*, *T. Yacobi*, *I. Levy*, *S. Moltchanov*, and **B. Fishbain**, "The effect of ego-motion on Environmental Monitoring", *Science of the Total Environment*, 533:8-16, 2015. IF 8.2. **Q1**.

13. *N. Avni*, **B. Fishbain,** and U. Shamir, "Water consumption patterns as a basis for water demand modeling", *Water Resource Research*, 51(10):8165-8181, 2015. IF 4.6. **Q1**.

14. *S. Moshenberg*, *U. Lerner*, and **B. Fishbain**, "Spectral Methods for Imputation of Missing Air Quality Data", *Environmental Systems Research*, 4(26):1-13, 2015.

15. Y. Goldfeld, O. Rabinovitch, **B. Fishbain**, T. Quadflieg, and T. Gries, "Sensory Carbon Fiber-based Textile-Reinforced Concrete for Smart Structures", *Journal of Intelligent Material Systems and Structures*, 27(4):469-489, 2016. IF 2.4. **Q2**.

16. **B. Fishbain**, D.S. Hochbaum, and S. Mueller[†], "A competitive study of the pseudoflow algorithm for the minimum s-t cut problem in vision applications", *Journal of Real-Time Image Processing*, 11:589-609, 2016. IF 2.9. **Q2**.

17. **B. Fishbain** and E. Moreno-Centeno, "Self-Calibrated Wireless Distributed Environmental Sensory Networks", *Scientific Reports*, 6:24382; doi: 10.1038/srep24382, 2016. IF 3.8. **Q1**.

18. *G. Raviv*, **B. Fishbain,** and A. Shapira, "Analyzing risk factors in crane- related near-miss and accident reports", *Safety Science*, 91:192-205, 2017. IF 4.7. **Q1**.

19. *G. Raviv*, A. Shapira, and **B. Fishbain**, "AHP-based analysis of the risk potential of safety incidents: Case study of cranes in the construction industry", *Safety Science*, 91:298-309, 2017. IF 4.7. **Q1**.

20. **B. Fishbain**, *U. Lerner*, T. Cole-Hunter, N. Castell, O. Popoola, D.M. Broday, T. Martinez Iñiguez, M. Nieuwenhuijsen, M. Jovasevic-Stojanovic, D. Topalovic, R.L. Jones, K. Galea, Y. Etzion, F. Kizel, *Y.N. Golumbic*, A .Baram-Tsabari, J.A. Robinson, D. Kocman, M. Horvat, V. Svecova, A. Arpaci, and A. Bartonova, "An Evaluation Tool Kit of Air Quality Micro-Sensing Units", *Science of the Total Environment*, 575(1):639-648, 2017. IF 8.2. **Q1**.

21. N. Castell, F.R. Dauge, P. Schneider, M. Vogt, *U. Lerner*, **B. Fishbain**, D.M. Broday, and A. Bartonova, "Can commercial low-cost sensor platforms contribute to air quality monitoring and exposure estimates?", *Environment International*, 99:293-302, 2017. IF 10.3. **Q1**.

22. *L.D. Frolich*, D. Vizel-Ohayon, and **B. Fishbain**, "Prediction of Bacterial Contamination Outbursts in Water Wells through Sparse Coding", *Scientific Reports*, 7:799, 2017. IF 3.8. **Q1**.

23. *Y.N. Golumbic*, D. Orr, A. Baram-Tsabari, and **B. Fishbain**, "Between Vision and Reality: A Case Study of Scientists' Views on Citizen Science", *Citizen Science: Theory and Practice*, 2(1/6):1-13, 2017. **Q1**.

24. F. Kizel, Y. Etzion, R. Shafran-Nathan, I. Levy, **B. Fishbain**, A. Bartonova, and D.M. Broday, "Node-to-node field calibration of wireless distributed air pollution sensor network", *Environmental Pollution*, 233:900-909, 2018. IF 7.6. **Q1**.

25. *T. Asheri Arnon*, S. Ezra, and **B. Fishbain**, "Contamination Detection of Water with Varying Routine Backgrounds by UV-Spectrophotometry", *Journal of Water Resources Planning and Management*, 144(9):04018056, 2018. IF 3. **Q1**.

26. *A. Nebenzal* and **B. Fishbain**, "Long Term Forecasting of Nitrogen Dioxide in Metropolitan Areas Using the Discrete Time Markov Model", *Environmental Modeling and Software*, 107:175-185, 2018. IF 4.8. **Q1**.

27. S. Kendler, I. Ron, S. Cohen, R. Raich, *Z. Mano*, and **B. Fishbain**, "Detection and Identification of Sub-Millimeter Films of Organic Compounds on Environmental Surfaces Using Short-Wave Infrared Hyperspectral Imaging: Algorithm Development Using a Synthetic Set of Targets", *IEEE Sensors Journal*, 19(7):2657-2664, 2019. IF 4.3. **Q1**.

28. *U. Lerner*, O. Hirshfeld[†], and **B. Fishbain**, "Optimal Deployment of a Heterogeneous Environmental Sensor Network", *Journal of Environmental Informatics*, 34(2):99-107, 2019. IF 10.22. **Q1**.

29. *Y.N. Golumbic*, **B. Fishbain,** and A. Baram-Tsabari, "User centered design of a citizen science air-quality monitoring project", *International Journal of Science Education, Part B*, 9(3):195-213, 2019. IF 1.4. **Q2**.

30. *T. Asheri Arnon*, S. Ezra and **B. Fishbain**, "Water Characterization and Early Contamination Detection in Highly Varying Stochastic Background Water based on Machine Learning Methodology for processing Real-Time UV-Spectrophotometry", *Water Research*, 155:333-342, 2019. IF 11.4. **Q1**.

31. S. Kendler, R. Aharoni, S. Cohen, R. Raich, S. Weiss, H. Levy, *Z. Mano*, B. Fishbain, and I. Ron, "Non-contact and non-destructive detection and identification of Bacillus anthracis inside paper envelopes", *Forensic Science International*, 301:e55-e58, 2019. IF 2.2. **Q1**.

32. A. Cahan, U. Lerner, **B. Fishbain**, and M. Bursztyn, "Blood Pressure variability is associated with heart rate in a large outpatient population", *Journal of Hypertension*, 37(p):e194, 2019. IF 4.9. **Q1**.

33. *A. Nebenzal*, **B. Fishbain**, and S. Kendler, "Model-based dense air pollution maps from sparse sensing in multi-source scenarios", *Environmental Modeling & Software*, 128:104701, 2020. IF 4.8. **Q1**.

34. T. Richter[†], **B. Fishbain**, A. Markus, G. Richter-Levin, and H. Okon-Singer, "Using machine learning-based analysis for behavioral differentiation between anxiety and depression", *Scientific Reports*, 10:16381, 2020. IF 3.8. **Q1**.

35. *Y.N. Golumbic*, A. Baram-Tsabari, and **B. Fishbain**, "Science literacy in action: Understanding scientific data presented in a citizen science platform by non-expert adults", International *Journal of Science Education Part B: Communication and Public Engagement*, 10(3): 232-247, 2020. IF 1.4. **Q2**.

36. S. Kendler and **B. Fishbain**, "Crime Scene Investigation using Hyperspectral Imaging-Opportunities and Challenges", *International Journal of Forensic Sciences*, 5(4):000205, 2020. IF 2.3. **Q1**.

37. S. Kendler, *A. Nebenzal*, D. Gold[†], P.M. Reed, and **B. Fishbain**, "The effects of air pollution sources / sensor array configurations on the likelihood of obtaining accurate source term estimations", *Atmospheric Environment*, 246:117754, 2021. IF 4.2. **Q1**.

38. R. Aharoni, V. Klymiuk, B. Sarusi, S. Young, T. Fahima, **B. Fishbain,** and S. Kendler, "Spectral light-reflection data dimensionality reduction for timely detection of yellow rust", *Precise Agriculture*, 22:267-286, 2021. IF 5.4. **Q1**.

39. Y. Salzer, H.H. Honig, R. Shaked, E. Abeles, A. Kleinjan-Elazary, *K. Berger*, S. Jacoby, **B. Fishbain**, and S. Kendler, "Towards on-site automatic detection of noxious events in dairy cows", *Applied Animal Behavior Science*, 236:105260, 2021. IF 2.2. **Q1**.

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16. CONFERENCES
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41. G. Perlman[†], R. Elkayam and **B. Fishbain**, "Complex Water System Management in the Age of IoT", *World Environmental & Water Resources Congress*, Henderson, NV, USA, May 17-21, 2020. (Oral)

42. G. Perelman[†] and **B. Fishbain**, "Synthesizing water-related time series for simulation studies while maintaining the original signal's statistical moments", *European Geoscience Union General Assembly*, Vienna Austria, May 23-27, 2022. (Oral)

43. **B. Fishbain**, *Z. Mano*, and S. Kendler, "Information theory solution approach for air-pollution sensors' location-allocation problem", *European Geoscience Union General Assembly*, Vienna Austria, May 23-27, 2022. (Oral)

44. G. Perelman[†] and **B. Fishbain**, "Water-Energy Nexus Based Optimization of Water Distribution Systems Under Failure and Identification of Critical Components", *World Environmental & Water Resources Congress*, Atlanta, GA, USA, June 5-8, 2022. (Oral)

45. *L. Khalifa* and **B. Fishbain**, "Machine Education Approach for Finding Victims in Flash Flooding Events", *2023 World Environmental & Water Resources Congress*, Henderson, NV, USA, May 21-24, 2023. (Oral)

46. *A. Geltman* and **B. Fishbain**, "Machine Education Approach for Country Scale High-Resolution Air Pollution Modelling", *iEMSs 2024 Biennial Conference*, East Lansing MI, USA, June 23-27, 2024. (Oral)

47. *A. Feldman*, S. Kendler and **B. Fishbain**, "Urban Air-Quality Estimation Using Visual Cues", iEMSs 2024 Biennial Conference, East Lansing MI, USA, June 23-27, 2024. (Oral)

48. *N. Ginio*, M. Lindenbaum, **B. Fishbain** and D. Liberzon, "Laboratory tool for spatio-temporal measurements of waves and slopes based on polarimetric sensing and Machine Learning", *1st European Fluid Dynamics Conference (EFDC1)*, Aachen Germany, September 16-20, 2024. (Oral)

49. L. Guericke, A. Daurat, H. Sonnenberg, N. Caradot, D. Steffelbauer, *O. Aloni*, **B. Fishbain**, E. Friedler, D. Sauter and F. Cherqui, "Modelling Pipe Deterioration or Defect Evolution?", *6th International Conference on Water Economics, Statistics and Finance & 10th Leading Edge Conference for Strategic Asset Management (LESAM)*, Pafos, Cyprus, April 28-30, 2025. (Oral)

50. *O. Aloni*, E. Friedler, D. Sauter, L. Guericke, <u>N. Caradot</u> and **B. Fishbain**, "Modelling Pipe Deterioration or Defect Evolution?", *6th International Conference on Water Economics, Statistics and Finance & 10th Leading Edge Conference for Strategic Asset Management (LESAM)*, Pafos, Cyprus, April 28-30, 2025. (Oral)

51. *L. Khalifa* and **B. Fishbain**, "Deep Learning for Flood Modeling: Generalizing Across Terrain and Flood Event Variations", *2025 World Environmental & Water Resources Congress*, Anchorage AK, USA, May 18-21, 2025. (Oral)

52. *O. Aloni* and **B. Fishbain**, "Synthetic Random Environmental Time Series Generation with Similarity Control, Preserving Original Signal's Statistical Characteristics", *2025 World Environmental & Water Resources Congress*, Anchorage AK, USA, May 18-21, 2025. (Oral)

53. <u>S. Cohen</u>, M. Housh and **B. Fishbain**, "WHALSIM: A Cyber-Physical Simulation Tool for Enhancing Cyber Security in Smart Water Systems", *2025 World Environmental & Water Resources Congress*, Anchorage AK, USA, May 18-21, 2025. (Oral)

54. <u>L. Guericke</u>, A. Daurat, H. Sonnenberg, N. Caradot, D. Steffelbauer, *O. Aloni*, **B. Fishbain,** E. Friedler, D. Sauter, A. Ringe, F. Cherqui, "Defect Evolution in Sewer Pipes: Enhancing Deterioration Models", The 13th Urban Drainage Modelling Conference (UDM), Innsbruck, Austria, September 15-19, 2025 (Oral).

55. *O. Aloni*, E. Friedler, D. Sauter, L. Guericke, N. Caradot, and **B. Fishbain**, "Graph Neural Networks and Random Forests for Report-Based Failure Prediction in Sewage Pipes", The 13th Urban Drainage Modelling Conference (UDM), Innsbruck, Austria, September 15-19, 2025 (Oral).

56. <u>*L. Yehezkel*</u>, O. Lavan, and **B. Fishbain**, "Automatic Post Earthquake Building Survey Using Semantic Segmentation and Geospatial Interpolation", American Geoscience Union (AGU) Annual Convention, New-Orleans, LA, USA, 15-19, December, 2025.

57. <u>*S. Cohen*</u>, B. Fishbain, and M. Housh, "WaCSim: A GenAI-Integrated Cyber-Physical Simulation Platform for Water Distribution Systems", American Geoscience Union (AGU) Annual Convention, New-Orleans, LA, USA, 15-19, December, 2025.

58. *D. Ettlinger-Levy*, S. Kendler, **B. Fishbain**, and S. Tal, "Acoustic Monitoring and Machine Learning for Sustainable Aquaculture: A Nature-Based Solution to Protect Water Quality", Word Environmental & Water Resources Congress, Mobile, AL, USA, April 26-29, 2026.

59. **B. Fishbain** and *O. Aloni*, "Physics-Based Blind Interpolation of Real-life Environmental Systems", Word Environmental & Water Resources Congress, Mobile, AL, USA, April 26-29, 2026 (Oral).

60. T. Trimble, M. Housh, *S. Cohen*, **B. Fishbain**, and <u>L. Sela</u>, "Mitigating Sensor Tampering with Resilient Pump Scheduling: An Operator-Attacker Approach", Word Environmental & Water Resources Congress, Mobile, AL, USA, April 26-29, 2026 (Oral).

Participation in organizing conferences

1. *7th IASTED International Conference on Visualization, Imaging, and Image Processing*, (VIIP 2007), Palma de Mallorca Spain, 29-31 August 2007. **Session Chair**.

2. *1st Workshop on Special Topics in Homeland Nuclear Security*, Berkeley, CA, USA, July 22-24, 2009. **Organization Committee**, **Coordinator**.

3. *Real-Time Image and Video Processing*, SPIE Photonics Europe, Brussels Belgium, April 12-16, 2010. **Organization Committee**.

4. *12th INFORMS Computing Society Conference*, Monterey, CA USA, January 9-11, 2011. **Organization Committee**.

5. *Real-Time Image and Video Processing*, SPIE, San Francisco, CA, USA, January, 23-27, 2011. **Organization Committee**.

6. *The 4th ACM SIGSPATIAL International Workshop on Computational Transportation Science* (IWCTS 2011), November 1, 2011, Chicago, Illinois, USA. **Program Committee**.

7. *Real-Time Image and Video Processing*, SPIE, San Francisco, CA, USA, January, 22-26, 2012. **Organization Committee**.
8. *The 5th ACM SIGSPATIAL International Workshop on Computational Transportation Science* (IWCTS 2012), November 6, 2012, Redondo Beach, CA, USA. **Program Committee**.
9. *Real-Time Image and Video Processing, SPIE, San Francisco*, CA, USA, February, 3-7, 2013. **Organization Committee**.
10. *Real-Time Image and Video Processing*, SPIE, Brussels Belgium, April, 14-17, 2014. **Program Committee**.
11. *Real-Time Image and Video Processing*, SPIE, San Francisco, CA, USA, February 8-12, 2015. **Program Committee**.
12. *Real-Time Image and Video Processing*, SPIE, Brussels, Belgium, April 7, 2016. **Program Committee**.
13. *Environmental & Water Resources Institute (EWRI) Congress*, West Palm Beach, FL, USA, May 22-26, 2016. **Session Chair**.
14. *2016 Annual convention of the Israel Society of Ecology and Environ- mental Sciences*, Tel-Aviv, Israel, June 21-23, 2016. **Session Chair**.
15. *Security and Sensing Symposium*, SPIE, Anaheim, CA, USA, 9-13 April 2017. **Program Committee**.
16. *Environmental & Water Resource Institute (EWRI) Congress*, American Society of Civil Engineers (ASCE), Sacramento, CA, USA, 21-25 May 2017. **Session Chair, Program Committee**.
17. *Enviroinfo*, Belval, Luxembuorg, 13-15 Sep 2017. **Program Committee**.
18. *Environmental & Water Resources Institute (EWRI) Congress*, American Society of Civil Engineers (ASCE), 3-7 June 2018. **Track Co-Chair** (Emerging and Innovative Technologies Track).
19. *Real-Time Image and Video Processing*, SPIE, Orlando Florida, USA, April 15-19, 2018. **Program Committee**.
20. *Enviroinfo, Garching,* Germany, 5-7 Sep 2018. **Program Committee**.
21. Environmental & Water Resources Institute (EWRI) Congress, American Society of Civil Engineers (ASCE), Pittsburgh, PA, USA, 19-23 May 2019. **Track Chair** (Emerging and Innovative Technologies Track).
22. *Environmental & Water Resources Institute (EWRI) Congress*, American Society of Civil Engineers (ASCE), Henderson, NV, USA, 17-21 May 2020. **Track Chair** (Emerging and Innovative Technologies Track).
23. *EnviroInfo 2020*, Nicosia, Cyprus, Sep. 23-25, 2020. **Program Committee**.
24. *EnviroInfo 2021*, Berlin, Germany, Sep. 27-29, 2021. **Program Committee**.
25. *EnviroInfo 2022*, Hamburg, Germany, Sep. 26-28, 2022. **Program Committee**.
26. *EnviroInfo 2023*, Garching, Germany, Oct. 11-13, 2023. **Program Committee**.
27. *EnviroInfo 2024,* Cairo, Egypt, Nov. 12-14, 2024. **Program Committee**.

17. Notes
Not Applicable