

Yoav Y. Schechner

Curriculum Vitae

Personal details

Name: Yoav Y. Schechner
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Academic Degrees

2000 Ph.D. in Electrical Engineering (Technion, Haifa, Israel).
1996 M.Sc. in Physics (Technion, Haifa, Israel).
1990 B.A. in Physics cum laude (Technion, Haifa, Israel).

Academic Appointments

2016–Present Professor, Viterbi Faculty of Electrical Engineering, Technion.
2016 Visiting Scientist, CSAIL, MIT.
2010–2011 Visitor, California Inst. of Tech., and NASA's Jet Propulsion Laboratory.
2007–2015 Associate Professor, Department of Electrical Engineering, Technion.
2002–2007 Senior Lecturer, Department of Electrical Engineering, Technion.
2000–2002 Research Scientist, Department of Computer Science, Columbia University.
1996–1999 Teaching assistant, Department of Electrical Engineering, Technion.
1994–1996 Teaching assistant, Faculty of Physics, Technion.

Professional Experience

2006–Present Consultant
1990–1994 Meteorological officer, IDF.

Teaching Experience

- 2002–Present Technion—Israel Institute of Technology –
Advanced course *Three-Dimensional Imaging and Reconstruction*.
Advanced course *Imaging Systems for Computer Vision*.
Undergraduate/graduate course *Electrooptic Systems*.
Undergraduate/graduate course *Image Processing and Analysis*.
Undergraduate course *Intr. to Digital Signal Processing*,
- 1994–1999 Technion — Israel Institute of Technology –
Undergraduate/graduate course *Image Processing and Analysis*.
Received the Award for Excellence in Teaching.
Instruction of undergraduate students in the electrooptics laboratory.
Instruction of undergraduate students in the physics laboratories (Faculty of Physics).

Public Professional Activities

- 2001 Program Committee
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'01).
- 2003 Program Committee
IEEE International Conference on Computer Vision (ICCV'03).
- 2004 Organizer and Chair
CCIT Workshop about Innovations in Signal and Image Processing, March 2004.
- 2004 Program Committee.
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'04).
- 2004 Chairing session on Non-Acoustic Sensors
IEEE/MTS Oceans'04.
- 2005 Chairing session on Non-Acoustic Imaging
IEEE/MTS Oceans'05.
- 2005 Program Committee
IEEE International Conf. on Computer Vision (ICCV'05).
- 2005 Program Committee; Chairing special session on Polarization in Computer Vision
SPIE Conf. on Polarization Science and Remote Sensing II.
- 2005 Program Committee
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'05).
- 2006 Program Committee.
European Conf. on Computer Vision (ECCV'06).
- 2006 Program Committee
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'06).
- 2007 Organizer and Chair
IEEE/ONR Scattering'2007: Int. Sympos. on Volumetric Scattering in Vision & Graphics.
- 2007 Program Committee
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'07).
- 2007 Program Committee
IEEE BMG - Beyond Multiview Geometry Workshop (Adjacent to CVPR 2007).
- 2007 Program Committee
SPIE Conf. on Polarization Science & Remote Sensing III.

2007 Organizer and Chair
Computer Vision and Graphics, Israel Ministry of Science Infrastructure Research Workshop.

2008 Organizer and Chair
CCIT Workshop on Computer Vision and Multimedia, July 2008.

2008 Organizer
German-Israel Workshop for Vision and Image Sciences.

2009 Workshop Chair
IEEE International Conference on Computer Vision (ICCV'09).

2009 Program Committee
Int. Conf. on Computational Photography (ICCP'09).

2009 Area Chair
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'09).

2009 Program Committee
Pacific-Rim Symposium on Image and Video Technology (PSIVT 2009).

2010 Finance Chair
IEEE Int. Conf. on Computational Photography (ICCP'10).

2010 Steering Committee
Israel Machine Vision Conference (2010).

2011 Program Committee
Int. Conf. on Computational Photography (ICCP'11).

2012 Program Chair
Int. Conf. on Computational Photography (ICCP'12).

2012 Area Chair
European Conf. on Computer Vision (ECCV'12).

2012–2014 Section Editor
Computer Vision: A Reference Guide (Encyclopedia of Computer Vision), Springer, 2014.

2012–2017 Associate Editor
Optics Express.

2013–2019 Steering Committee
Int. Conf. on Computational Photography (ICCP).

2014 Scientific Committee Member and Session Chair
Int. Congress Imaging Science (ICIS'14).

2014 Program Committee
IEEE International Workshop on Computational Cameras and Displays (CCD'14).

2015 Program Committee
SPIE Conf. on Polarization Science & Remote Sensing VII.

2015 Area Chair
IEEE Int. Conf. Computer Vision (ICCV'15).

2016 Program Committee
SEEEI Optical Engineering.

2016 Area Chair
IEEE Comp. Soc. Conf. on Computer Vision & Pattern Recognition (CVPR'16).

2016 Program Committee
Int. Conf. on Computational Photography (ICCP'16).

- 2016 Chair, jointly with Miri Ben-Chen
The Annual Henry Taub International TCE Conference *3D Visual Computing: Graphics, Geometry & Imaging*.
- 2016 Guest Editor, jointly with W. Freeman, A. Savakis, N. Snavely, W. Heidrich,
IEEE Trans. Computational Imaging, Special Issue on *Extreme Imaging*.
- 2017 Program Committee
SPIE Conf. on Polarization Science & Remote Sensing VIII.
- 2021 Program Chair
Int. Conf. on Computational Photography (ICCP'21).
- 2021 Program Committee
SPIE Conf. on Polarization Science & Remote Sensing X.
- 2021 MAIA Science Team
Member of the MAIA Science Team as a Collaborator.

Reviewer for:

Science Foundation Ireland; ISF Grants; BSF Grants; NOAA Grant; 3DV14; IEEE TPAMI; Int. J. Computer Vision; SIGGRAPH; IEEE TIP; JOSA A; Signal Processing; J. Electronic Imaging; Photogrammetric Eng. and Remote Sensing; Machine Vision and App.; Integrative and Comparative Biology; IEEE ICCV; IEEE CVPR; ECCV; ICPR; Int. Conf. on Advances in Pattern Recognition (ICAPR); IEEE Trans. Circuits and Systems for Video Technology; Applied Optics. Journal of the Atmospheric Sciences

Technion Activities

- 1996–1999 Coordinator of the “Pixel-Club” - a colloquium forum of Technion researchers in the fields of image processing and computer vision.
- 2004,2014 Public Relations for the Technion in the press (press releases regarding the invention dealing with underwater photography, including interviews to the general press, television interviews to *Reuters*, *Channel 8*, *ATS*, etc.
- 2004–2005 Lectures to Technion invited guests and donors.
- 2005 Trip to Germany (Munich) for making the case in front of the Scientific Review Committee of the Minerva Ollendorff Center.
- 2004–2006 Interviewing students for the Technion’s Excellence Program.
- 2013–2015 Outreach: Advising a year-long project of high-school (Kabri) student (Sapir Matlaw) for Physics matriculation.
- 2015 Fund-raising tour for the ATS, February.
- 2014-2017 Member in the Standing Committee for Academic Studies.
- 2015–2020 Member of the Technion inter-departmental committee for Marine Engineering.
- 2016–2017 Advisory Board Committee, Samuel Neaman Institute.
- 2018–2019 Representative to the Technion Senate.
- 2018–2019 Member of the Technion Autonomous Systems Program committee.
- 2018–2019 Member of the Planning and Budgeting Committee in the Council for Higher Education.
- 2018–2020 Technion Senate member.
- 2018–2020 Member of the Viterbi fellowship committee.

- 2019–Present Committee member of the Technion inter-departmental program for Oceanic Engineering.
- 2022–Present Technion Senate member.

Department Activities

- 2002-2003 Gave introductory lectures in the course “Topics in electrical engineering”.
- 2003-2005 Gave talks to motivate high-school students in technical studies (“Girls day”).
- 2002-2006 Served in the Study-Termination Committee of the Elect. Eng. Dept.
- 2005-2006 Served in the Undergraduate Curricula Committee of the Elect. Eng. Dept.
- 2006-2010 Served as an advisor for distinguished undergraduate students (Dept. of Elect. Eng.).
- 2007-2009 Served in the faculty-students committee of the Elect. Eng. Dept.
- 2008-2012 Served as Elbit-Systems/Technion vision systems program coordinator (Dept. of Elect. Eng.).
- 2008-2010 Served in the social/cultural committee of the Elect. Eng. Dept.
- 2009 Coordinator of the Elect. Eng. Dept. undergraduate excellence track with research emphasis.
- 2010 Served in the Academic Development Committee of the Elect. Eng. Dept.
- 2012-2015 EE representative to the Technion Senate.
- 2011-2015 Organizing the EE colloquium.
- 2014-2016 Member of the Academic Development Committee.
- 2014-2016 Chairing the social/cultural committee of the Elect. Eng. Dept.
- 2015-2018 EE Vice-Dean for representation activities.
- 2002-2019 Academic supervisor of the *Vision and Image Sciences Lab*.
- 2018-2021 EE Vice-Dean for graduate studies.

Membership in Professional Societies

IEEE, MTS (Marine Technology Society), OES (Oceanic Engineering Society), OSA

Awards and Honors

1. Emerging Researcher Best Paper, JOSIA A 2021.
2. Technion Distinguished Lecturer Award 2020.
3. Mark and Diane Seiden Chair in Optoelectronics, Electrical Engineering Department 2019.
4. **ERC-Synergy** Grant 2019.
5. Best Demo Award, ISMA 2019.
6. Best Paper Award, ICCP 2018.
7. Jacobs Distinguished Publication Award 2018 (lead author: student Mark Sheinin).
8. Best Student Paper Award, CVPR 2017.
9. Distinguished Teaching Honorable Mention, Technion 2017.
10. Fumio Okano Best 3D Paper Award 2017.
11. Best Lecture Award (Mark Sheinin is first author), IAAS 2016.
12. Best Student Paper (Marina Alterman is first author), 2nd place IMVC 2015.
13. Best Paper Award, ICCP 2013.
14. Outstanding Reviewer Award, ICCV 2009.
15. Outstanding Reviewer Award, ECCV 2008.
16. Henry Taub Prize for Academic Excellence, 2008.
17. Outstanding Reviewer Award, IEEE ICCV 2007.
18. Outstanding Reviewer Award, IEEE CVPR 2007.
19. Ray and Miriam Klein Research Award, 2006.
20. Harry Goldman Academic Lectureship - Canada, 2005.
21. Alon Fellowship, 2002-2005 (This fellowship is a national award to the most outstanding new Israeli faculty members in the Natural and Exact Sciences).
22. Landau Fellowship - supported by the Taub Foundation, 2002-2004.
23. The Louis Morin Fellowship, 2000,2001.
24. The Award for Excellence in Teaching, from the Technion, 1999.
25. Otto Schwarz Foundation Excellence Award, 1999.
26. Israeli Ministry of Science (Eshkol) Distinction Fellowship, 1998-99.
27. Ollendorff Award for research in the field of image processing and analysis, 1998.
28. Gutwirth Special Distinction Fellowship, 1995.
29. Wolf Foundation Excellence Award for graduate students, 1994.
30. Invention Award, from the Chief Eng. Logistic Director (RALZA”D) Israeli Air Force, 1994.
31. Excellence Award from the President of the Technion, 1990.
32. Excellence Award from the Dean, 1989.
33. Excellence Award from the Dean, 1988.

Graduate Students

Completed Theses

- 2004 Mr. Nir Karpel, MSc., *Recovering underwater scenes using polarization analysis*.
- 2005 Ms. Einat Kidron, MSc., *Audio-visual cross-modal analysis*
(Secondary Adv.: Prof. Michael Elad).
- 2005 Ms. Sarit Shwartz, MSc., *Blind separation of high dimensional sources*.
- 2006 Mr. Saar Bobrov, MSc., *Image-based prediction of thermal imaging performance*.
- 2006 Mr. Anatoly Litvinov, MSc., *Image mosaicing in the presence of radiometric distortions*.
- 2006 Ms. Yael Erez, MSc., *Spatially varying frequency compounding of ultrasound images*.
(Secondary Adv.: Prof. Dan Adam);
- 2006 Mr. Yuval Averbuch, MSc., *Adaptive filtering of visibility degraded images*.
- 2006 Mr. Nir Maor, MSc., *Compression at the source*.
(Primary Adv.: Prof. Arie Feuer);
- 2007 Mr. Michael Kolomenkin, MSc., *Image matching using photometric information*.
(Primary Adv.: Dr. Ilan Shimshoni);
- 2007 Mr. Netanel Ratner, MSc., *Optimal multiplexing for imaging*.
- 2008 Mr. Yaron Diamant, MSc., *Overcoming secondary reflections*.
- 2008 Mr. Zohar Barzilay, MSc., *Relating audio and video of multiple simultaneous events*.
- 2009 Mr. Fima Koreban, MSc., *Geometry by Deflaring*.
- 2009 Ms. Tali Treibitz, **PhD**. *Geometry and Photometry of Imaging Through a Medium*.
- 2011 Ms. Marina Alterman, MSc., *Multiplexed Fluorescence Unmixing*.
- 2011 Mr. Amit Aides, MSc., *Multiscale Ultrawide Video Extrapolation*
- 2012 Ms. Dana Segev, MSc., *Visual Audio Denoising*
(Secondary Adv.: Prof. Michael Elad).
- 2013 Mr. Amit Oved, MSc., *Weak Coupling of Spectral-Dimensional Scattering Functions for Atmospheric Recovery and Correction*
(Primary Adv.: Prof. Steve Lipson).
- 2013 Mr. Meir Hatzvi, MSc., *Three dimensional optical transfer of rotating beams*.
- 2013 Mr. Yohay Swirski, **PhD**, *Three dimensional reconstruction using natural flickering illumination*.
- 2014 Mr. Yuval Bahat, MSc, *Multimodal audio inpainting*.
- 2014 Mr. Ron Schneider, MSc, *Light propagation in fog*.
- 2015 Mr. Alex Golts, MSc, *Resolution limits due to pointwise degradations in color imaging*.
- 2015 Ms. Marina Alterman, **PhD**. *Vision through random dynamic distortions*.
(Secondary Adv.: Prof. Joseph Shamir)
- 2015 Ms. Moran Mordechay, MSc, *Optimal measurements for poisson compressed sensing*.
- 2016 Mr. Daniel Veikherman, MSc, *Clouds in The Cloud*.
- 2016 Mr. Vadim Holodovsky, MSc, *In-situ multi-view multi-scattering stochastic tomography*.
- 2018 Mr. Amit Aides, **PhD**. *Lightfield analysis and recovery of the atmosphere*.
- 2019 Mr. Mark Sheinin, **PhD**. *Leveraging implicit structure in artificial illumination for computer vision*.

- 2019 Ms. Adi Vainiger, MSc, *In-situ multi-view multi-scattering stochastic tomography*
- 2019 Mr. Aviad Levis, **PhD**. *Volumetric Imaging of the Natural Environment*.
- 2019 Mr. Adam Geva, MSc, *X-ray Computed Tomography Through Scatter*
- 2020 Mr. Lior Arbel, **PhD**. *Symbaline - an Active Wine Glass Musical Instrument*.
- 2020 Mr. Eden Sasson, MSc, *Flare in Interference-Based Hyperspectral Cameras* (Jointly with Tali Treibitz).
- 2020 Mr. Jonatan Chernyak, MSc, *Optimal Anisotropic Irradiation for X-Ray Computed Tomography*.
- 2021 Mr. Yonatan Gat, MSc, *Scattering Tomography using Multiplexed X-Ray Sources*.
- 2021 Mrs. Tamar Loeub, MSc, *Hierarchical Scattering Tomography with a Monotonicity Prior*.
- 2021 Mrs. Yael Sde-Chen, *Neural Network for Cloud Computed Tomography*.
- 2022 Ms. Or Elezra, *Stochastic Polarized Scattering Tomography*.
- 2022 Mr. Nir Shaul, MSc, *Tomography of Turbulence Strength Based on Passive Scintillation Imaging*.
- 2022 Mr. Ido Czerninski, MSc, *Fast and Parallelized Stochastic Scene Reconstruction*.

Theses in Progress

- Mr. Gur Chemel, (towards MSc) expected in 2022.
- Ms. Adi Vainiger (towards PhD) expected in 2024.
- Mr. Michael Fisher, (towards PhD) expected in 2024.
- Mr. Roi Ronen, (towards PhD) expected in 2024.
- Mrs. Inbal Kom Betzer, (towards MSc) expected in 2023.

Research Grants

- 2021–2023 Israeli Space Agency (Israeli Ministry of Science, Technology and Space), 1,000,000 NIS (in total for both partners).
Principal Investigators: Daniel Rosenfeld (HUJI), Yoav Y. Schechner,
“Development of satellite constellations for observing cloud dynamic properties”
- 2019–2025 **ERC-Synergy**, 13,878,593 Euro (in total for three partners).
Principal Investigators: Yoav Y. Schechner (Technion), Ilan Koren (WIS), Klaus Schilling (ZfT).
“CloudCT - Cloud Tomography by Satellites for Better Climate Prediction”.
- 2019 TASP (Technion Autonomous Systems Program), \$ 50,000,
Principal Investigator: Yoav Y. Schechner,
“Free-drifting oceanic camera network”
- 2019 Israeli Space Agency (Israeli Ministry of Science, Technology and Space), 30,000 NIS (out of a larger multi-PI grant)
Principal Investigators: Pini Gurfil (Technion), Daniel Rosenfeld (HUJI), Yoav Y. Schechner (Technion), Colin Price (TAU).
“Clouds -Zeus Mission”.
- 2018 MAFA”T, 400,000 NIS.
Principal Investigator: Yoav Y. Schechner.
“Multiangular Thermal Signatures for Point Target Localization and Recognition”.

- 2017–2021 BSF, 154,000 \$.
Principal Investigators: Yoav Y. Schechner, David Diner, Larry Di Girolamo.
“Spectropolarimetric 3D Volumetric Scatter Recovery”.
- 2016–2020 ISF, 828,184 NIS.
Principal Investigator: Yoav Y. Schechner.
“Self calibration in polarized imaging”.
- 2017–2019 Israeli Space Agency (Israeli Ministry of Science, Technology and Space), 800,000 NIS (in total to both partners)
Principal Investigators: Daniel Rosenfeld (HUJI) and Yoav Y. Schechner (Technion).
“Development of satellite constellations for observing cloud dynamic properties”.
- 2016–2018 Ministry of Science, Technology and Space, 351,325 NIS.
Principal Investigators: Timor Katz (IOLR), Gitai Yahel (Ruppin Academic Center), Uri Shavit (Technion), Tali Treibitz (Haifa U.), Yoav Schechner (Technion)
“Developing new methodologies for quantifying biological sediment resuspension in the sea and for studying its dynamics.”
- 2016–2017 Technion Funds for Security Research, 100,000 NIS,
Investigators: Yoav Y. Schechner and Joshua Zeevi, “Change detection by texture analysis and geometric mapping methods”.
- 2015–2018 Magnet (The Israel Ministry of Commerce), 953,150 NIS during two years (in total all three partners) and 232,400 NIS in the third year (separately to Schechner).
Principal Investigators in the group: Joshua Zeevi, Guy Gilboa and Yoav Y. Schechner.
“OMEK” Consortium.
- 2015–2017 Norman and Helen Asher Fund (Space Research Inst.) \$ 10,000,
Principal Investigator: Yoav Y. Schechner, “Verification of a multiview sensed atmosphere”
- 2015–2016 National Geographic Society, \$ 20,000,
Principal Investigator: Gadi Katzir. Contributing Investigators: Daniel Weihs and Yoav Y. Schechner. “Anthropogenic changes in water optical/photoc qualities: Their effects on avian visual predation of fish and ‘fish nurseries’ in coastal shallow water habitats”
- 2015–2016 Technion Funds for Security Research, 80,000 NIS,
Principal Investigator: Yoav Y. Schechner, “Mobile sky-based sky-views”
- 2015–2017 GIF (The German-Israel Foundation), 90,000 Euro (per partner)
Principal Investigators: Yoav Y. Schechner and Dietrich Althausen. Contributing Investigators: Mordechai (Moti) Segev and Albert Ansmann. “3D Widefield Sky Scatterer Tomography by Lidar Anchor”
- 2014–2015 Cornell Tech Faculty Exchange Program \$ 7,000,
Principal Investigators: Yoav Y. Schechner and Lihi Zelnik-Manor.
- 2014 Minerva equipment fund, Eu 60,000,
Principal Investigator: Yoav Y. Schechner,
- 2014–2015 Norman and Helen Asher Fund (Space Research Inst.) \$ 10,000,
Principal Investigator: Yoav Y. Schechner, “Network for Remote Atmospheric Scatterer Sensing”
- 2014–2015 Technion Funds for Security Research, 100,000 NIS,
Principal Investigator: Yoav Y. Schechner, “Maritime Clandestine View”
- 2013–2017 BSF (The US-Israel Binational Science Foundation), \$ 136,000,
Principal Investigator: Yoav Y. Schechner and David Diner, “Multiangular Computational Remote Photography”

2013–2018 MAFA”T, 600,000 NIS,
Principal Investigator: Yoav Y. Schechner, “3D Cloud Imaging”

2012–2016 TASP (Technion Autonomous Systems Program), \$ 50,000,
Principal Investigator: Yoav Y. Schechner, Lihi Zelnik-Manor and Alon Wolf, “Technion Underwater-Threats Snake Robots Detection System”

2013–2014 TASP (Technion Autonomous Systems Program), \$ 34,483,
Principal Investigator: Michael Elad and Yoav Y. Schechner, “Better Sensing by Joint Audio-Visual Processing”

2012–2016 ISF (The Israel Science Foundation), 736,000 NIS,
Principal Investigator: Yoav Y. Schechner, “Inter-Media Vision”

2011–2012 Elbit Systems Ltd., \$ 28,000,
Principal Investigator: Yoav Y. Schechner, “Static vs. Dynamic Object Discrimination at Long Range”

2009–2011 Elbit Systems Ltd., \$ 30,000,
Principal Investigator: Yoav Y. Schechner, “Peripheral Distractions and Alerts.”

2008–2012 ISF (The Israel Science Foundation), 736,000 NIS,
Principal Investigators: Yoav Y. Schechner and Michael Elad , “Auditory computer-vision.”

2007–2011 BSF (The US-Israel Binational Science Foundation), \$ 106,000,
Principal Investigators: Yoav Y. Schechner, Srinivasa Narasimhan , Shahriar Negahdaripour , “Sensing fusion for underwater scene recovery.”

2007–2011 Philips, 154,000 Euro.
Principal Investigator: Yoav Y. Schechner, “Visual extrapolation.”

2007–2009 Magnetron (The Israel Ministry of Commerce), 2,169,058 NIS,
Principal Investigators: Yoav Y. Schechner and Iscan-Robotics
“Defect detection in automotive glass.”

2006–2009 Ministry of Science (Infrastructure Inter-institution Grant), 900,000 NIS,
Principal Investigators: Yoav Y. Schechner, Aryeh Weiss, Ehud Rivlin,
“Computer micro-vision.”

2005–2006 ElOp Ltd., 113,281 NIS.
Principal Investigator: Yoav Y. Schechner, “Improvement of vision in haze.”

2005 GIF (The German-Israel Foundation), 30,000 Euro,
Principal Investigator: Yoav Y. Schechner, “Quantitative image mosaics.”

2004–2008 ISF (The Israel Science Foundation), 475,079 NIS,
in addition to \$ 50,000 of equipment (for building a new lab).
Principal Investigator: Yoav Y. Schechner, “Computer vision in turbid media.”

2004–2005 Magnetron (The Israel Ministry of Commerce), 1,021,564 NIS,
Principal Investigators: Yoav Y. Schechner and El-Op Electrooptics Industries
“Improving capabilities of long-range observations.”

2003–2005 BSF (The US-Israel Binational Science Foundation), \$ 59,984,
Principal Investigators: Yoav Y. Schechner, Shree K. Nayar, Peter Belhumeur,
“Coded vision and illumination.”

2003-2010 MAFA”T, 444,250 NIS.
Principal Investigator: Yoav Y. Schechner, “Compensation of haze in images.”

2002-2005 Alon Fellowship, \$ 29,000, in addition to salary.

- 2002-2004 NSF (USA), \$ 250,000,
Principal Investigators: Rafael Piestun, Carol Cogswel and Yoav Y. Schechner,
“High-speed 3D microscopy by hybrid optical-digital encoding and processing.”
- 2000-2002 The Morin Foundation, \$ 100,000
Principal Investigators: Yoav Y. Schechner and Shree K. Nayar, “Multidimensional
image mosaics.”
- 1998-1999 The Eshkol Fund, Doctorate Fellowship.

PUBLICATIONS

Theses

1. Y. Y. Schechner, Advisor: Prof. J. Shamir “*Rotation phenomena in waves,*” M.Sc. Thesis in Physics, Technion (1996).
2. Y. Y. Schechner, Advisors: Dr. N. Kiryati and Prof. J. Shamir “*Analysis and reconstruction of complex scenes via optical cues,*” Ph.D Thesis in Electrical Engineering, Technion (1999).

Journal Papers

1. Y. Y. Schechner and J. Shamir, *Parameterization and orbital angular momentum of anisotropic dislocations,* Journal of the Optical Society of America - A **13**, pp. 967-973 (1996).
2. Y. Y. Schechner, R. Piestun and J. Shamir, *Wave propagation with rotating intensity distributions,* Physical Review E. **54**, R50-R53 (1996).
3. R. Piestun, Y. Y. Schechner and J. Shamir, *Self-imaging with finite energy,* Optics Letters **22**, pp. 200-203 (1997).
4. Y. Y. Schechner, J. Shamir and N. Kiryati, *Vision through semi-reflecting media: Polarization analysis,* Optics Letters **24**, pp. 1088-1090 (1999).
5. R. Piestun, Y. Y. Schechner and J. Shamir, *Propagation invariant wave-fields with finite energy,* Journal of the Optical Society of America - A **17**, pp. 294-303 (2000).
6. Y. Y. Schechner, J. Shamir and N. Kiryati, *Polarization and statistical analysis of scenes containing a semi-reflector,* Journal of the Optical Society of America - A **17**, pp. 276-284 (2000).
7. Y. Y. Schechner, N. Kiryati and R. Basri, *Separation of transparent layers using focus,* International Journal of Computer Vision **39**, pp. 25-39 (2000).
8. Y. Y. Schechner and N. Kiryati, *Depth from defocus vs. Stereo: How different really are they?* International Journal of Computer Vision **39**, pp. 141-162 (2000).
9. Y. Y. Schechner and S. K. Nayar, *Generalized mosaicing: Wide field of view multispectral imaging,* IEEE Trans. Pattern Analysis & Machine Intelligence **24**, pp. 1334-1348 (2002).
10. Y. Y. Schechner and S. K. Nayar, *Generalized mosaicing: High dynamic range in a wide field of view,* International Journal of Computer Vision **53**/3, pp. 245-267 (2003).
11. Y. Y. Schechner, S. G. Narasimhan and S. K. Nayar, *Polarization-based vision through haze,* Applied Optics **42**/3, Special Feature on *Light on Color in the Open Air* pp. 511-525 (2003).
12. A. Litvinov and Y. Y. Schechner *A radiometric framework for image mosaicking,* Journal of the Optical Society of America - A **22**, pp. 839-848 (2005).
13. Y. Y. Schechner and S. K. Nayar, *Generalized mosaicing: Polarization panorama,* IEEE Trans. Pattern Analysis & Machine Intelligence **27**, pp. 631-636 (2005).
14. S. Shwartz, M. Zibulevsky and Y. Y. Schechner, *Fast kernel entropy estimation and optimization,* Signal Processing, Special Issue on *Information Theoretic Signal Processing* **85**/5, pp. 1045-1058 (2005).

15. Y. Y. Schechner and N. Karpel, *Recovery of underwater visibility and structure by polarization analysis*, IEEE Journal of Oceanic Engineering **30**, pp. 570-587 (2005).
16. A. Greengard, Y. Y. Schechner and R. Piestun, *Depth from diffracted rotation*, Optics Letters **31**, pp. 181-183 (2006).
17. E. Kidron, Y. Y. Schechner and M. Elad, *Cross-modal localization via sparsity*, IEEE Trans. Signal Processing **55**, pp. 1390-1404 (2007).
18. Y. Y. Schechner, S. K. Nayar, and P. N. Belhumeur, *Multiplexing for optimal lighting*, IEEE Trans. Pattern Analysis & Machine Intelligence **29**, pp. 1339-1354 (2007).
19. S. Bobrov and Y. Y. Schechner, *Image-based prediction of imaging and vision performance*, Journal of the Optical Society of America - A **24**, pp. 1920-1929 (2007).
20. Y. Y. Schechner and Y. Averbuch, *Regularized image recovery in scattering media*, IEEE Trans. Pattern Analysis & Machine Intelligence **29**, pp. 1655-1660 (2007).
21. N. Ratner, Y. Y. Schechner and F. Goldberg, *Optimal multiplexed sensing: bounds, conditions and a graph theory link*, Optics Express **15**/25, pp.17072-17092 (2007).
22. Y. Erez, Y. Y. Schechner and D. Adam, *Space variant ultrasound frequency compounding based on noise characteristics*, Ultrasound in Medicine and Biology **34**/6, pp. 981-1000 (2008).
23. D. M. Kocak, F. R. Dalgleish, F. M. Caimi and Y. Y. Schechner, *A focus on recent developments and trends in underwater imaging*, Marine Technology Society Journal **42**, pp. 52-67 (2008), special issue on *State of the Technology*.
24. S. Shwartz, Y. Y. Schechner and M. Zibulevsky, *Blind separation of convolutive image mixtures*, Neurocomputing **71**, pp. 2164-2179 (2008), special issue on *advances in blind signal processing*.
25. E. Namer, S. Shwartz and Y. Y. Schechner, *Skylesless polarimetric calibration and visibility enhancement*, Optics Express **17**, pp. 472-493 (2009).
26. T. Treibitz and Y. Y. Schechner, *Active polarization descattering*, IEEE Trans. Pattern Analysis & Machine Intelligence **31**, pp. 385-399 (2009).
27. Z. Barzelay and Y. Y. Schechner, *Onsets coincidence for cross-modal analysis*, IEEE Transactions on Multimedia **12**, pp. 108-120 (2010).
28. Y. Y. Schechner, *Inversion by P^4 : Polarization picture post-processing*, Philosophical Transactions of The Royal Society B **366**:1565, pp. 638-648 (2011).
29. T. Avraham and Y. Y. Schechner, *Ultrawide foveated video extrapolation*, IEEE Selected Topics in Signal Processing **5**, pp 321-334 (2011), special issue on *recent advances in processing for consumer displays*.
30. Y. Swirski, Y. Y. Schechner, B. Herzberg, and S. Negahdaripour, *CauStereo: Range from light in nature*, App. Optics **50**/28, Special Feature on *Light on Color in the Open Air* pp. F89-F101 (2011). **Selected** for publication at the Virtual Journal for Biomedical Optics **6**/11 (2011).
31. T. Treibitz, Y. Y. Schechner, C. Kunz and H. Singh, *Flat refractive geometry*, IEEE Trans. Pattern Analysis & Machine Intelligence **34**:1, pp. 51-65 (2012).
32. T. Treibitz and Y. Y. Schechner *Resolution loss without imaging blur*, Journal of the Optical Society of America - A **29**, pp. 1516-1528 (2012).
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1. Y. Y. Schechner and S. K. Nayar, *Multidimensional fusion by image mosaics*, in Image Fusion: Algorithms and Applications, pp. 193-221, ed. Tania Stathaki (Academic Press 2008).

Patents

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2. Y. Y. Schechner, N. Kiryati and J. Shamir, *Multi-valued images and their separation*, Multi Image Analysis Workshop, Schloss Dagstuhl, Germany (2001).
3. Y. Y. Schechner *Multidimensional image sensing*, Vision & Image Science Workshop, Schloss Dagstuhl, Germany (2002).
4. Y. Y. Schechner, *Hybrid imaging: Recent advances in physics-based vision*, German-Israeli Binational Workshop, Israel (2004).
5. Y. Y. Schechner, *Underwater vision*, German-Israeli Binational Workshop, Israel (2004).
6. Y. Y. Schechner, *Efficient image-based relighting*, Second Israel-UK Symposium on Computer Graphics, Israel (2004).
7. Y. Y. Schechner, *Recovery of underwater visibility and structure by polarization analysis*, MTS Underwater Imaging Workshop, Washington DC (2005).
8. Y. Y. Schechner, *Control of active radiation to improve imaging*, MTS Underwater Imaging Workshop, Boston (2006).
9. Y. Y. Schechner, *Light propagation effects for the benefit of 3D structure estimation*, Israel-Italy Bi-National Conference (2007).
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18. Y. Y. Schechner, *Improvement of underwater visual capabilities*, Unmanned Marine Vehicles Symposium, AUVSI Israeli Chapter, Haifa, Israel (2009).
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21. Y. Y. Schechner, *Geometry from refracted radiance*, Keynote talk, Workshop on Color and Photometry in Computer Vision, Barcelona, Spain (ICCV 2011).
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27. Y. Y. Schechner, *Distributed viewpoints: Grand Nature Challenge*, CVPR AC Workshop, Vancouver (2016).
28. M. Alterman and Y. Y. Schechner, *3D in natural random refractive distortions*, SPIE 3D Imaging, Visualization, and Display Conference (2016) **The Fumio Okano Best 3D Paper Award**.
29. Y. Y. Schechner, *Revealing the polarization analyzer angles, and the unknown target*, SPIE Polarization: Measurement, Analysis, and Remote Sensing XII (2016).
30. Y. Y. Schechner, *Atmospheric 3D volumetric recovery*, Royal Society International Scientific Seminar - Imaging in Graphics, Vision and Beyond (2016).

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32. Y. Y. Schechner, *Opportunities in distributed imaging through scatter*, Marine Imaging Workshop (2017).
33. A. Levis, A. Aides, Y. Y. Schechner, A. B. Davis and V. Holodovsky, *Inverse-scattering bridging micron to kilometer scales*, CVPR Workshop on Computational Cameras and Displays (2017).
34. Y. Y. Schechner, *Distributed views across media: From space to ocean-depths*, EarthVision Workshop at CVPR (2017).
35. Y. Y. Schechner, *Walk to the dark side*, International Workshop on Computer Vision (2018).
36. Y. Y. Schechner, A. Aides, A. Levis, V. Holodovski *Sensing aerosol distributions and clouds in 3D to better understand their climatic role*, ISEES 46th Annual Conf. Science and the Environment (2018).
37. Y. Y. Schechner, *Statistical tomography of microscopic life*, CVPR Workshop and Challenge: Automated Analysis of Marine Video for Environmental Monitoring (2018).
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39. A. Aides, Y. Y. Schechner, V. Holodovsky, A. Levis, D. Althausen, *Measuring atmospheric scattering in 3D*, OSA Propagation Through and Characterization of Atmospheric and Oceanic Phenomena (2018).
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41. Y. Y. Schechner, *Scattering as key to three dimensional tomography: from medical imaging to spaceborne atmospheric sensing*, Xi'an University Symposium on Optics & Photonics (2019).
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Refereed Conference Papers

Within the fully refereed papers of this section:

Papers # 2,3,5,9-11,13,15,20,22,23,24,27-30,32-34,37-39,43-45,47,48,51,52,54,59-60,63 were *Orals*

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10. Y. Y. Schechner, S. G. Narasimhan and S. K. Nayar, *Instant dehazing of images using polarization*, Proc. IEEE CVPR - Computer Vision and Pattern Recognition, Vol. 1, pp. 325-332 (2001).
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12. Y. Y. Schechner and S. K. Nayar *Uncontrolled modulation imaging*, Proc. IEEE CVPR - Computer Vision and Pattern Recognition, Vol. II, pp. 197-204 (2004).
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29. T. Treibitz and Y. Y. Schechner, *Polarization - Beneficial for visibility enhancement?*, Proc. IEEE CVPR - Computer Vision and Pattern Recognition (2009).
30. Y. Swirski, Y. Y. Schechner, B. Herzberg and S. Negahdaripour, *Stereo from flickering caustics*, Proc. IEEE ICCV - Int. Conference on Computer Vision (2009).
31. A. Sarafraz, S. Negahdaripour and Y. Y. Schechner, *Enhancing Images in Scattering Media Utilizing Stereovision and Polarization*, IEEE WACV - Workshop on Applications of Computer Vision (2009).
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36. D. Segev, Y. Y. Schechner and M. Elad, *Example-based cross-modal denoising*, Proc. IEEE CVPR - Computer Vision and Pattern Recognition (2012).
37. Y. Swirski and Y. Y. Schechner, *3Deflicker from motion*, Proc. IEEE ICCP - Int. Conference on Computational Photography (2013). **Best Paper Award.**

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41. D. Veikherman, A. Aides, Y. Y. Schechner and A. Levis, *Clouds in The Cloud*, Proc. ACCV - Asian Conference on Computer Vision (2014).
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45. V. Holodovsky, Y. Y. Schechner, A. Levin, A. Levis and A. Aides, *In-situ multi-view multi-scattering stochastic tomography*, Proc. IEEE ICCP - Int. Conference on Computational Photography (2016)
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48. M. Sheinin, Y.Y. Schechner, K. N. Kutulakos, *Computational imaging on the electric grid*, Proc. IEEE CVPR - Computer Vision and Pattern Recognition (2017). **Best Student Paper Award**
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52. T. Maeda, A. Kadambi, Y. Y. Schechner and R. Raskar, *Dynamic heterodyne interferometry*, Proc. IEEE ICCP - Int. Conference on Computational Photography (2018) **Best Paper Award**.
53. A. Geva, Y. Y. Schechner, J. Chernyak, R. Gupta, *X-ray computed tomography through scatter*, Proc. ECCV - European Conference on Computer Vision (2018).
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60. P. Sharma, M. Aittala, Y. Schechner, A. Torralba, G. Wornell, W. Freeman and F. Durand, *What you can learn by staring at a blank wall*, Proc. IEEE ICCV - International Conference on Computer Vision (2021).pp. 2330-2339
61. R. Ronen, Y. Schechner, E. Eytan, *4D Cloud scattering tomography*, Proc. IEEE ICCV - International Conference on Computer Vision (2021).
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63. A. Vainiger, O. Shubi, Y. Y. Schechner, Z. Yin , H. Baars, B. Heese, and D. Althausen, *Supervised learning calibration of an atmospheric lidar*, IGARSS IEEE International Geoscience and Remote Sensing Symposium (2022).
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2. R. Piestun, Y. Y. Schechner and J. Shamir, *Generalized self-imaging in free space*, EOS Topical meeting on Diffractive Optics, pp. 128-129 (1997).
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4. Y. Y. Schechner, S. Nayar and P. Belhumeur *Codes for multiplexing images and lighting*, Israeli Computer Vision Day, Herzliya (2003).
5. Y. Y. Schechner and S. K. Nayar, *Polarization mosaicking: High dynamic range and polarization imaging in a wide field of view.*, Proc. SPIE **5158**: Polarization science and remote sensing, pp. 93-102 (2003).
6. N. Karpel and Y. Y. Schechner, *Portable polarimetric underwater imaging system with a linear response*, Proc. SPIE **5432**: Polarization: Measurement, Analysis and Remote Sensing VI, pp. 106-115 (2004).
7. N. Karpel and Y. Y. Schechner, *Overcoming turbidity in underwater imaging*, 1st Sympos. of the Israeli Assoc. Aquatic Sciences (2004).
8. Y. Y. Schechner, M. Elad and E. Kidron *Pixels correlated to sound*, Israeli Computer Vision Day (2004).

9. Y. Y. Schechner, S. K. Nayar, P. N. Belhumeur and H. S. Peri *Imaging in multiplexed illumination*, SPIE **5529**: Nonimaging Optics and Efficient Illumination Systems, pp. 198-205 (2004).
10. A. Greengard, Y. Y. Schechner and R. Piestun *Depth from rotating point spread functions*, Proc. SPIE **5557**: Optical Information Systems II, pp. 106-115 (2004).
11. Y. Y. Schechner and N. Karpel, *Recovering scenes by polarization analysis*, MTS/IEEE OCEANS, pp. 1255-1261 (2004).
12. Y. Y. Schechner and N. Karpel, *Attenuating natural flicker patterns*, MTS/IEEE OCEANS, pp. 1262-1268 (2004).
13. E. Namer and Y. Y. Schechner, *Advanced visibility improvement based on polarization filtered images*, Proc. SPIE **5888**: Polarization Science and Remote Sensing II, pp. 36-45 (2005).
14. Y. Y. Schechner and Y. Averbuch *Distance dependent regularization*, Israeli Computer Vision Day (2005).
15. Y. Y. Schechner, *Compensating haze in long range observations*, MilTech, pp. 63-70 (2006).
16. S. Bobrov and Y. Y. Schechner, *Image-based prediction of thermal imaging performance*, Proc. SPIE **6395**: Electro-Optical and Infrared Systems: Technology and Applications III (2006).
17. Y. Erez, Y. Y. Schechner and D. Adam *Acousticlean images*, Israeli Computer Vision Day (2006).
18. Y. Y. Schechner *Optimal multiplexing within fundamental limits*, Computer Vision and Graphics, Israel Ministry of Science Infrastructure Research Workshop (2007).
19. Y. Y. Schechner *Glasswork*, Computer Vision and Graphics, Israel Ministry of Science Infrastructure Research Workshop (2008).
20. Y. Y. Schechner, D. J. Diner, A. Davis and R. Chipman *Polarization-based dehazing*, Multi-angle Imaging SpectroRadiometer (MISR) Data Users Science Symposium, Pasadena (2009).
21. A. Sarafraz, S. Negahdaripour and Y. Y. Schechner, *Performance assessment in solving the correspondence problem in underwater Stereo Imagery* Proc. MTS/IEEE OCEANS (2010)
22. Y. Swirski, Y. Y. Schechner, B. Herzberg and S. Negahdaripour, *Underwater stereo using natural flickering illumination* Proc. MTS/IEEE OCEANS (2010)
23. Z. Barzeley and Y. Y. Schechner *Audio-visual association: look at sparse events*, 3rd Annual Southern California Computer Vision Meetup (2010).
24. M. Alterman, Y. Y. Schechner and A. Weiss *Multiplexed fluorescence unmixing*, Israeli Computer Vision Day (2010).
25. J. Martonchik, Y. Schechner, M. Bull and D. Diner, *Application of graph cut theory to the MISR aerosol retrieval process*, American Geophysical Union (AGU) Fall Meeting, San Francisco (2011).
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34. A. B. Davis, D. J. Diner, I. Yanovsky, M. J. Garay, F. Xu, G. Bal, Y. Y. Schechner, A. Aides, Z. Qu and C. Emde, *3D-TRACE: A new NASA initiative in three-dimensional Tomographic Reconstruction of the Aerosol-Cloud Environment*, Proc. EGU - European Geosciences Union general assembly (2013).
35. Y. Y. Schechner, *Views affected by a wavy air-water surface*, Light and Color in Nature Conference, Fairbanks, Alaska (2013).
36. Y. Swirski and Y. Schechner, *3Descatter from Motion*, Israel Computer Vision Day (2013).
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44. Y. Y. Schechner, *Multi-view sensing across media*, 5th OASIS (2015).
45. A. Aides, D. Veikherman, A. Levis and Y. Y. Schechner, *Ground-based multi-angle imaging network for 3D atmospheric sensing*, Challenges for Three-Dimensional Radiative Transfer in the Earth and Atmospheric Sciences, AGU-GAC-MAC-CGU Joint Assembly (2015).

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47. L. Arbel, Y. Schechner and N. Amir, *Methods for exciting wine glasses by coupling to plucked strings - theory and experiment* Vienna Talk on Music Acoustics (2015).
48. D. Rosenfeld, A. Levis, I. Bibi, Y. Y. Schechner, A. Rosenfeld, D. Fischer and J. Woytach, *Globe imaging of 3D motion: Microphysics to centuries of change*, 1st Int. Workshop on Extreme Imaging (2015).
49. A. Levis, Y. Y. Schechner, A. Aides and V. Holodovski *Airborne Three-Dimensional Cloud Tomography*, The 2015 Israel Computer Vision Day (2016).
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51. V. Holodovsky, A. Levis, Y. Y. Schechner, A. Levin, A. Aides, and A. B. Davis, *3D Multi-Scattering Tomography*, Int. Conf. Computational Photography (2016).
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54. M. Sheinin and Y. Y. Schechner, *Underwater Multi-Platform Visual Observation Paths*, The Israeli Association for Aquatic Sciences Conference (2016). **Best Lecture Award**.
55. V. Holodovsky, A. Avni, Y. Y. Schechner, T. Treibitz, S. Grossbard, U. Shavit, *Underwater Optical Imaging for Quantifying Sediment Resuspension*, The Israeli Association for Aquatic Sciences Conference (2016).
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61. M. Sheinin, Y.Y. Schechner, K. N. Kutulakos, *Computational imaging on the electric grid*, CVPR Demo (2018).
62. A. Levis, Y. Y. Schechner, R. Talmon, *In-situ tomography of plankton*, MOST Workshop on Exploring Translucent Media (2018)
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65. G. Yahel, M. Gilboa, S. Grossbard, A. Vainiger, T. Treibitz, Y. Y. Schechner, U. Shavit, T. Katz, *Biological Activity: an overlooked mechanism for sediment resuspension, transport, and modification in the ocean*, PiE (2018)
66. A. Vainiger, Y. Y. Schechner, T. Treibitz, A. Avni, D. S. Timor, *Underwater wide-field tomography of sediment resuspension*, PiE (2018)
67. A. Geva, Y. Y. Schechner, J. Chernyak, R. Gupta, *X-ray computed tomography through scatter*, Israel Computer Vision Day (2018)
68. L. Arbel, Y. Y. Schechner and N. Amir, *Symbaline: a liquid sloshing vibrato mechanism for the Symbaline; an active wine glass instrument*, Demo presentation, Proc. ISMA - The International Symposium on Music Acoustics (2019). **Best Demo Award**
69. K. Schilling, Y. Y. Schechner and I. Koren, *CLOUDCT – A Formation of cooperating nano-satellites for cloud characterisation by computed tomography*, 70th International Astronautical Congress (2019).
70. C. Cornet, D. Rosenfeld, S. Aviad, P. Crebassol, P. Dandini, E. Defer, C Fallet, V. Holodovsky, C Price, D Ricard, Y. Y. Schechner, P. Tabary, Y. Yair, *C³IEL: Cluster for climate and cloud imaging of evolution and lightning, an innovative way to observe the clouds and their environment*, Grenoble Newspace Week Workshop (2019).
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72. D. Althausen, S. Mewes, B. Heese, J. Hofer, Y. Schechner, A. Aides, V. Holodovsky, *Vertical profiles of dust and other aerosol types above a coastal site*, Central Asian DUst Conference (CADUC) (2019)
73. A. B. Davis, F. Xu, G. van Harten, D. J. Diner, A. Levis, Y. Y. Schechner and G. Matheou, *Inherent properties of clouds in the PBL derived from multi-angle spectro-polarimetric imaging at the “Edge of space:” new capabilities of JPL’s AirMSPI sensor on NASA’s Airborne ER-2 Platform*, AGU Fall meeting (2019).
74. A. Levis, V. Holodovsky, Y. Y. Schechner, E. Eytan, I. Koren, A. Aumann, K. Schilling, *CloudCT: Spaceborne scattering tomography by a large formation of small satellites for improving climate predictions*, The 4th COSPAR Symposium (2019).
75. K. Schilling, Y. Y. Schechner, I. Koren, *Formations of small satellites to characterize 3D cloud properties: TOM and CloudCT*, The 4th COSPAR Symposium (2019).
76. D. Rosenfeld, C. Cornet, S. Aviad, P. Crebassol, P. Dandini, E. Defer, C. Fallet, V. Holodovsky, A. Levis, A. Kaidar, C. Price, D. Ricard, Y. Y. Schechner, P. Tabary, Y. Yair, *C³IEL: Cluster for climate and cloud imaging of evolution and lightning, an innovative way to observe clouds and their environment*, The 4th COSPAR Symposium (2019)
77. V. Holodovsky, M. Fisher, Y. Y. Schechner, D. Rosenfeld, A. Levis, *Geometric aspects of stereoscopic spaceborne imaging of dynamic clouds in the CLOUD experiment*, The 4th COSPAR Symposium (2019)

78. K. Schilling, Y. Y. Schechner, I. Koren, *CloudCT – Computed Tomography of Clouds by a Small Satellite Formation*, 12th IAA symposium on Small Satellites for Earth Observation (2019).
79. A. Levis and Y. Y. Schechner, J. Loveridge, and A. B. Davis, *Multi-view polarimetric scattering tomography and three-dimensional retrieval of cloud microphysics*, MISR Science Team Meeting (2020).
80. T. Leoub A. Levis, Y. Y. Schechner, *Monotonicity of Droplet size in Cloud Multi-scale Scattering Tomography*, MISR Science Team Meeting (2020).
81. C. Cornet, D. Rosenfeld, S. Aviad, R. Binet, P. Crebassol, E. Defer, A. Frid, V. Holodovsky, A. Kaidar, R. Peroni, C. Pierangelo, C. Price, D. Ricard, Y. Schechner, P. Tabary, Y. Yair, *C³IEL Mission Cluster for Cloud Evolution, ClimatE and Lightning*, Earth Observation for Water Cycle Science (2020).
82. A. Levis, Y. Y. Schechner, A. B. Davis, and J. Loveridge, *Droplet size tomography using multi-view polarimetric measurements*, AGU Virtual Fall Meeting (2020).
83. R. Ronen, Y. Y. Schechner, and E. Eytan, *Spatiotemporal tomography based on scattered multi-angular signals and its use for resolving evolving clouds using moving platforms*, virtual EGU General Assembly (2021).
84. M Tzabari, V. Holodovsky, O. Shubi, E. Eytan, O. Altaratz, I. Koren, A. Aumann, K. Schilling, and Y. Y. Schechner, *CloudCT 3D volumetric tomography - mission advances*, virtual EGU General Assembly (2021).
85. Y. Sde-Chen, Y. Y. Schechner, V. Holodovsky, and E. Eytan, *Deep Learning for Three-Dimensional Volumetric Recovery of Cloud Fields*, virtual EGU General Assembly (2021).
86. A. Aumann, Y. Y. Schechner, V. Holodovsky, and E. Eytan, *Retrieving 3D microphysical properties of shallow clouds with nanosatellites flying in formation*, 72nd International Astronautical Congress (2021).
87. A. Levis, A. B. Davis, J. R. Loveridge, and Y. Y. Schechner, *3D cloud tomography and droplet size retrieval from multi-angle polarimetric imaging of scattered sunlight from above*, in Polarization Science and Remote Sensing X vol. 11833, p. 1183305. International Society for Optics and Photonics (2021).
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89. I. Koren, O. Altaratz, E. Eytan, T. Dror, M. D. Chekroun, J. M. Flores, Y. Y. Schechner, A. Levis, V. Holodovsky, M. Tzabari, R. Ronen, Y. Sde-Chen, K. Schilling, A. Aumann, J. Scharnagl, *CloudCT – filling knowledge gaps in small cloud physics*, International Conference on Clouds and Precipitation (2021).
90. V. Holodovsky, M. Tzabari, Y. Y. Schechner, O. Shubi and E. Eytan, *Optimized optical settings for spaceborne scattering tomography of clouds*, Poster in IEEE ICCP - Int. Conference on Computational Photography (2021).
91. V. Holodovsky, M. Tzabari, Y. Y. Schechner, O. Shubi, E. Eytan, Orit Altaratz, Ilan Koren, Anna Aumann and Klaus Schilling, *Design of cameras, formation satellites, and orbit for conducting optical scattering tomography of clouds from space*, Poster in IEEE ICCP - Int. Conference on Computational Photography (2021).

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93. Y. Gat, Y. Y. Schechner, R. Gupta, *Scattering Tomography Using Multiplexed X-ray Sources*, Poster in IEEE ICCP - Int. Conference on Computational Photography (2021).
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96. Y. Bertschy, Y. Y. Schechner, *Vicarious spaceborne polarimetric camera calibration using solar power stations*, SPIE Defense + Commercial Sensing (2022).
97. A. Vainiger, O. Shubi, Y. Y. Schechner, Z. Yin, H. Baars, B. Heese, and D. Althausen, *Towards Learning-Based Spatiotemporal Lidar Analysis Aided by the Atmospheric Lidar Data Augmentation (ALiDAn) Framework*, International Radiation Symposium (IRS) (2022).
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103. I. Czerninski, Y. Y. Schechner, *Highly Parallelized 3D Sensing of the Atmosphere by Tailoring Image-based Retrieval to a GPU*, COSPAR 44th General Assembly (2022).
104. A. Vainiger, O. Shubi, Y. Y. Schechner, Z. Yin, H. Baars, B. Heese, and D. Althausen, *Spatiotemporal and multi-wavelength atmospheric lidar data augmentation (ALiDAn)*, poster at IEEE International Conference on Computational Photography (ICCP) (2022).

Reports

1. I. Czerninski, Y. Y. Schechner, *Accelerating inverse rendering by using a GPU and reuse of light paths*, arXiv:2110.00085 (2021).
2. N. Torem, R. Ronen, Y. Y. Schechner, M. Elad, *Towards A Most Probable Recovery in Optical Imaging*, arXiv:2212.03235 (2022).