Curriculum Vitae

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Ohad Ben-Shahar, Professor

Personal Details and Contact Information

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Education

12/2003	**Ph.D.**	**Yale university**, New Haven, CT. Department: Computer science Thesis: *The perceptual organization of visual flows* Advisor: Steven W. Zucker
01/1999	**M.Phil.**	**Yale university**, New Haven, CT. Department: Computer science
03/1996	**M.Sc.**	**Technion, Israel Institute of Technology**, Haifa, Israel. Department: Computer science Thesis: *On the rearrangement of movable objects by a mobile robot* Advisor: Ehud Rivlin
03/1989	**B.Sc.** *(summa cum laude)*	**Technion, Israel Institute of Technology**, Haifa, Israel. Department: Computer science

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Employment History

Jun 2015 - Present	**Professor**, Dep. of Computer Science, Ben Gurion University, Israel.
Oct 2011 - June 2015	**Associate Professor**, Dep. of Computer Science, Ben Gurion University, Israel.
Sep 2004 - Sep 2011	**Senior Lecturer**, Dep. of Computer Science, Ben Gurion University, Israel.
Dec 2003 - Aug 2004	**Postdoctoral Associate**, Dep. of Computer Science, Yale university, CT.
Jan 1997 - Dec 2003	**Research Assistant**, Dep. of Computer Science, Yale university, CT.
Mar 1996 - Jan 1997	**R&D Software Engineer**, Elscint Corp., Haifa, Israel.
Mar 1994 - Mar 1996	**Research Assistant**, Dep. of Computer Science, Technion, Israel.
Mar 1989 - Mar 1994	**R&D Software Engineer**, IDF (Israel Defense Force), Israel.

Professional Activities and Service

- **Position in university and academic administration**

2021-Present	:	**Head, School of Brain Sciences and Cognition, BGU.**
2020-2025	:	The presidential steering committee for strategic information, BGU.
2017-2020	:	**Chairperson, Computer Science Department, BGU.**
2018-2019	:	Steering committee, Center for Data Science Research, BGU..
2017-2020	:	Senate member, BGU.
2015-2018	:	Steering committee, School of Brain and Cognitive Sciences, BGU.
2015-2017	:	Steering committee, Computer Science department, BGU.
2013-2017	:	Steering committee, ABC Robotics center, BGU.
2013-2017	:	Director, Computer Science program, Achva College.
2012-2020	:	Promotions and hiring committee, Computer Science Dept., BGU.
2010-2012	:	Senate member, BGU.
2007-2017	:	Steering committee, Brain and Cognitive Sciences Department, BGU.
2008-2010	:	Steering committee, Zlotowski Center for Neuroscience Research, BGU.
2006-2009	:	Director of undergraduate studies (junior students), Computer Science Dept., BGU.
2004-2005	:	Web administration committee, Computer Science Dept., BGU.
2000-2003	:	Founding organizer, CVC Round Table, Yale university.

- **Editorial boards**

2010-2015 Associate Editor - Journal of Visual Communication and Image Representation.

- **National Grant committees**

Israel Science Foundation (ISF)

- **Conference organization and program committees**

2006-present	AC/PC	-	Numerous positions as area chair or program committee member in top international computer vision and AI related conferences, including ICCV, CVPR, ECCV, IJCAI, WACV, VISART, and others
2020	Co-Organizer	-	New Trends in Image Restoration and Enhancement (CVPR workshop),USA.
2018	Co-Organizer	-	New Trends in Image Restoration and Enhancement (CVPR workshop),USA.
2017	Co-Chair	-	Image Dynamics in Material and Shape Perception Symposium, Germany.
2016	General chair	-	Sensing: from Minds to Machines Conference, Israel.
2014	Program committee	-	Minerva school on Cognitive Robotics, Berlin, Germany.
2011 - 2013	Steering Committee	-	Israel Machine Vision Conference (IMVC).
2012	Co-Chair	-	Animal Visual Search Symposium (part of ICN).
2009	Organizer and Chair	-	BGU Interdisciplinary Vision Day (BGUVD09).
2007	Organizer and Chair	-	BGU Interdisciplinary Vision Day (BGUVD07).
2006	Program committee	-	IEEE Workshop on Perceptual Organization in Computer Vision (POCV).
2006	Organizer and Chair	-	BGU Interdisciplinary Vision Day. (BGUVD06)

- **Manuscript reviewing - Journal papers**

  IEEE transactions on Pattern Analysis and Machine Intelligence
  IEEE transactions on Robotics and Automation
  Journal of Intelligent & Robotic Systems
  Medical Image Analysis
  IEEE transactions on System, Man, and Cybernetics
  Pattern Recognition
  Pattern Recognition Letters
  Journal of Mathematical Imaging and Vision
  Soft Computing
  International Journal of Pattern Recognition and Artificial Intelligence.
  British Journal of Psychology
  Spatial Vision
  Journal of Vision
  Journal of Physiology-Paris
  Vision Research
  And others...

- **Manuscript reviewing - Conference papers**

  Numerous reviews for top computer vision, computer graphics, and AI conferences, including IJCAI, ICCV, CVPR, ECCV, CAIP, BMVC, ACCV, SIGGRAPH, and others

- **Funding agencies reviewing**

  Israel Science Foundation (ISF)
  United States-Israel Binational Science Foundation (BSF)
  The German Israeli Foundation (GIF)
  India-Israel Binational Program
  Israel Ministry of Health

- **Membership in professional societies**

2017-2019	ACM SIGGRAPH
2012-2018	International Society for Neuroethology (ISN)
2002-Present	Vision Sciences Society (VSS)
1996-Present	Institute of Electrical and Electronics Engineers (IEEE)
2012-2014	International Association of Pattern Recognition (IAPR)
2008-2010	Society for Neuroscience (SfN)

Teaching Activities

- **Courses taught** (U-Undergraduate, G-Graduate)

Computational and Biological Vision	G+U	Ben-Gurion University, Israel.
Introduction to Numerical Analysis	U	Ben-Gurion University, Israel.
Selected Topics in Computational Vision	G	Ben-Gurion University, Israel.
Cognition and Computation	G	Ben-Gurion University, Israel.
Research seminar	G	Ben-Gurion University, Israel.
Advanced Topics in Computational Vision	U	Ben-Gurion University, Israel.
Software Engineering Project	U	Ben-Gurion University, Israel.
Computer Science Project	U	Ben-Gurion University, Israel.
Programming languages	U	Technion, Israel.

Research Students and Theses Advised

- **In progress**

Michael Lellouch	Toward M.Sc., expected in 2026
Gur Shalev Elkin	Toward M.Sc., expected in 2026
Nadav Alali	Toward M.Sc., expected in 2026
Brahan Wassan Aklilu	Toward M.Sc., expected in 2026
Tal Alfi	Toward M.Sc., expected in 2026
Roy Lipszyc	Toward M.Sc., expected in 2026
Noa Gur	Toward M.Sc., expected in 2027
Jonathan Zmora	Toward M.Sc., expected in 2027
Ron Franco	Toward M.Sc., expected in 2027 (Joint with Ofir Cohen)
Dan Zlotnikov	Toward Ph.D., expected in 2028
Ophir Shahar	Toward Ph.D., expected in 2027
Alex Lazarobitch	Toward Ph.D., expected in 2028

- **Postdoctoral Alumni**

2018 *Efrat Taig*
Global optimization techniques for vision and learning
2013 *Alik Mokeichev*
Natural image statistics in early image representations
2010 *Rami Ben-Ari*
Fast and robust visual tracking

- **Ph.D Alumni**

2021 *Rotem Mairon*
Towards Revealing Visual Relations Between Fixations: Modeling the Center-Bias During Free-Viewing
2019 *Boaz Arad*
On the estimation and exploitation of hyperspectral data for computational and biological vision
2018 *Efrat Taig*
Global optimization with gradient heuristics
2017 *Ehud Barnea*
On employing spatial statistics for the prediction of object and visual element locations
2013 *Ilan Kadar*
From perceptual relations to scene gist recognition
2013 *Yair Adato*
From specular shape reconstruction to complex motion estimation
2012 *Alik Mokeichev*
The geometry of color and its interactions in early and mid-level vision
2012 *Guy Ben-Yosef*
Visual curve completion in the tangent bundle

- **M.Sc. Alumni**
  - 2025 *Yaniv Ohayon*
    Puzzle Solving for Arbitrary Convex Fragments
  - 2023 *Elad Amar*
    Image Synthesis for Solar Flare Prediction
  - 2023 *Ilan Git*
    Autonomous Tracking of Marine Animals Using a Single Moving Receiver
  - 2022 *Roy Toren*
    3D Puzzle Solving for Archeological Applications
  - 2021 *Ben Vardi*
    Puzzle Solving with Relaxation Labeling
  - 2021 *Peleg Harel*
    Solving crossing cuts polygonal puzzles as a physical mechanical system
  - 2020 *Keren Berger*
    A Novel Framework for Biometrics: Inter-individual Differences in Perception for Identity Authentication
  - 2017 *Shir Gur*
    From square pieces to brick walls: The next challenge in solving jigsaw puzzles
  - 2017 *Gal Nir*
    Multi inducer grouping for curve completion: Perceptual and computational exploration
  - 2014 *Rotem Mairon*
    The contextual emergence of visual saliency
  - 2013 *Ehud Barnea*
    RGB-D object detection from partial pose estimation of symmetric objects
  - 2013 *Or Piamante* (co-advised with Maoz Shamir, BGU)
    Neuronal coding of orientation in the primary visual cortex of the macaque monkey
  - 2012 *Dolev Pomeranz*
    A fully automated greedy square jigsaw puzzle solver
  - 2011 *Michal Shemesh*
    Free boundary active contours with applications to comptuer vision.
  - 2010 *Liana Diesendruck*
    Overt and covert attention interact with curvature-based perceptual singularities.
  - 2009 *Hadassa Dalrophe*
    Curvature-based statistics of edge co-occurrence.
  - 2009 *Eran Korkidi* (co-advised with Amir Shapiro, BGU)
    Design and control of an autonomous apparatus for spraying date palm tress
  - 2008 *Ilan Kadar*
    Evolving boundary detectors for natural images via genetic programming
  - 2008 *Maor Mishkin*
    Hierarchical tracking - A novel framework for robust multi-target tracking
  - 2008 *Yair Adato*
    On the reconstruction of specular shape from images
  - 2007 *Moran Hirsh*
    Compact texture representation via scale-space dynamics.
  - 2007 *Guy Ben-Yosef*
    Computational and biologically plausible models for curvature-based pre-attentive texture segregation
  - 2007 *Alik Mokeichev*
    Stochastic emergence of repeating cortical motifs in spontaneous membrane potential fluctuations

Research Grants **(Sorted chronologically by starting date)**

[G32] **A prototype drone policing system for pigeon deterrence in UAV hangars.**
Directorate of Defense Research and Development (MAFAT).
Principal Investigator: Ohad Ben-Shahar.
Period: 05/2025-04/2030. Stage I Budget: ₪50,000 (approx $17,000).

[G31] **Can Fish Really Navigate a Maze? Unraveling Aquatic Spatial Intelligence**
Israel Science Foundation - (ISF 0501/25), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2025-09/2030. Budget: ₪1,350,000 (approx $450,000).

[G30] **A laboratory for animal visual navigation**
Israel Science Foundation - (ISF 0504/25), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2025-09/2026. Budget: ₪1,200,000 (approx. $400,000).

[G29] **Toward autonomous marine biobots by direct brain stimulation: the ultimate conjunction of artificial intelligence and brain sciences**
Office of Naval Research (ONR award number N62909-24-1-2015)
Principal Investigators: Ohad Ben-Shahar, Ronen Segev.
Period: 01/2024-01/2027. Budget: $300,000.

[G28] **Reconstructing the Past: Artificial Intelligence and Robotics Meet Cultural Heritage**
Horizon 2020 FET Open grant No. 964854 (6 groups consortium),
Israeli Principal Investigators: Ohad Ben-Shahar.
Period: 09/2021-03/2026. Total budget: approx. €3,600,000. Israeli budget: approx €600,000.

[G27] **The neural basis of fish navigation: moving from the lab to the wild coral reef**
Israel Science Foundation - (ISF FIRST/Bikura 0555/19), Israel.
Principal Investigators: Ronen Segev, Moshe Kiflawi, and Ohad Ben-Shahar.
Period: 10/2019-09/2022. Budget: $220,000.

[G26] **From Neuroscience to Foolproof Affordable Retinal Biometrics**
Cyber Security Research Center (CSRC), BGU, Israel.
Principal Investigators: Ohad Ben-Shahar and Ronen Segev
Period: 01/2019-12/2019. Budget: $55,000.

[G25] **HC Vision: Non-RGB low light camera technology**
Samsung Runway program, Israel.
Principal Investigators: Ohad Ben-Shahar
Period: 06/2018-12/2018. Budget: $50,000.

[G24] **Sensing: From minds to machines**
Ministry of Science, Technology and Space, Israel.
Principal Investigators: Ohad Ben-Shahar
Period: 2016. Budget: $11,000.

[G23] **Sensing: From minds to machines**
Israel Science Foundation - (Workshop grant 2142/16), Israel.
Principal Investigators: Ohad Ben-Shahar and Boaz Rafaeli
Period: 2016. Budget: $31,000.

[G22] **An Autonomous service robot for elderly users with limited mobility and vision**
Ministry of Science, Technology, and Space, Israel.
Principal Investigators: Ronen Brafman, Gay Shani, Michael Elhada, and Ohad Ben-Shahar.
Period: 05/2016-04/2019. Budget: $300,000.

[G21] **Visuo-motor adaptation without a cortex: how does the archer fish solve the refraction problem?**
Israel Science Foundation - (ISF FIRST/Bikura 0281/15), Israel.
Principal Investigators: Ronen Segev, Ofer Donchin, and Ohad Ben-Shahar.
Period: 10/2015-09/2018. Budget: $300,000.

[G20] **OMEK (Depth)** - Technologies for acquisition and processing of 3D information
Magnet Program, Chief Scientist, Ministry of Industry and Trade, Israel
Principal Investigator: Ohad Ben-Shahar
Period: 06/2015-05/2019. Budget: approx $300,000.

[G19] **Sweet pepper harvesting robot (SWEEPER)**
Horizon 2020 project under the ICT Program (involving 6 European groups).
Israeli Principal Investigators: Ohad Ben-Shahar, Yael Edan, and Israel Parmet.
Period: 02/2015-09/2018. Total budget: approx. €4,000,000. Israeli budget: approx €600,000.

[G18] **Automated identification of potato deseases using digital images**
Chief scientist - Ministry of Agriculture (Grant 857-0710-14), Israel.
Principal Investigators: Guy Shani, Victor Elchanati, Lea Tsror, Ohad Ben-Shahar.
Period: 10/2013-09/2019. Budget: $150,000. Withdrawn by PI request.

[G17] **Lazy neurons for good shape**
The National Institute for Psychobiology (101-12-13), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2012-09/2015. Budget: $150,000.

[G16] **Visual curve completion in the tangent bundle - Theory and applications**
Israel Science Foundation - (ISF 0259/12), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2012-09/2016. Budget: $185,000.

[G15] **Active vision: from animal behavior to robotics**
Israel Science Foundation - (ISF FIRST/Bikura 1274/11), Israel.
Principal Investigators: Yoram Gutfreund, Alon Wolf, and Ohad Ben-Shahar.
Period: 10/2011-09/2014. Budget: $190,000.

[G14] **Clever Robotics for Crops (cRops)**
FP7 Large-scale Integrating Project under the NMP Program (involving 15 European groups).
Israeli Principal Investigators: Yael Edan, Ohad Ben-Shahar, and Amir Shapiro.
Period: 10/2010-09/2014. Total project budget: €7,640,000. Israeli budget: €973,000.

[G13] **Autonomous system for spraying in vineyards**
Chief scientist - Ministry of Agriculture, Israel.
Principal Investigators: Amir Shapiro, Yael Edan, and Ohad Ben-Shahar.
Period: 10/2009-09/2012. Budget: $130,000.

[G12] **Autonomous spraying robot for pepper greenhouses**
Chief scientist - Ministry of Agriculture, Israel.
Principal Investigators: Avital Bachar, Yael Edan, Amir Shapiro, and Ohad Ben-Shahar.
Period: 10/2009-09/2012. Budget: $200,000.

[G11] **Shape from specular flows – Theory, practice, and applications**
Israel Science Foundation (ISF 1245/08), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2008-09/2013. Budget: $180,000.

[G10] **Self-stablizing and efficient robust uncertainty management in swarms of UAV**
Air Force Office of Scientific Research (AFOSR), USA.
Principal Investigators: Michael Segal, Shlomi Dolev, and Ohad Ben-Shahar.
Period: 10/2008-09/2011. Budget: $145,000.

[G9] **Mechanisms of active vision in barn owls**
DFG - Deutsche Forschungsgemeinschaft, Germany.
Principal Investigators: Hermann Wagner, Ohad Ben-Shahar, and Ehud Rivlin.
Period: 02/2008-08/2010. Budget: $150,000.

[G8] **A autonomous robotic system for targeted sparying of date palm trees**
Chief scientist - Ministry of Agriculture, Israel.
Principal Investigators: Amir Shapiro, Ohad Ben-Shahar, and Yael Edan.
Period: 04/2008-03/2011. Budget: $100,000.

[G7] **Toward shape from specular reflections under real-world illumination**
National Science Foundation (NSF IIS-0712956), USA.
Principal Investigators: Todd Zickler and Ohad Ben-Shahar.
Period: 09/2007-08/2010. Budget: $380,000.

[G6] **Visual saliency without feature gradient - Implications to computer vision and graphics**
The BGU foundation for the promotion of research, Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2007-09/2008. Budget: $10,000.

[G5] **Perceptual singularities without feature gradient - Implications to attentional selection**
The National Institute for Psychobiology (207-07-08), Israel.
Principal Investigator: Ohad Ben-Shahar.
Period: 10/2007-09/2009. Budget: $50,000.

[G4] **A robotic system for targeted spraying in orchards and vineyards**
Ministry of Science, Israel.
Principal Investigators: Amir Shapiro, Ohad Ben-Shahar, and Yael Edan.
Period: 04/2007-03/2009. Budget: $40,600.

[G3] **Texture segmentation and description for 4^{th} generation visual inspection machines**
IMG4 (Magnet Program) - Ministry of Industry and Trade, Israel
Principal Investigators: Itshak Dinshtein, Ohad Ben-Shahar, and Klara Kedem.
Period: 08/2005-07/2010. Budget: approx $950,000.

[G2] **A robotic apparatus for pollinating date palm trees**
ICA, Israel.
Principal Investigators: Amir Shapiro, Ohad Ben-Shahar, and Yael Edan.
Period: 07/2006-12/2007. Budget: $18,000.

[G1] **A new approach to future farming**
The Dutch-Israel Agricultural Science and Technology Program
Principal Investigators: Amir Shapiro, Ohad Ben-Shahar, and Yael Edan.
Period: 01/2007 (workshop grant). Budget: $16,000.

Patents

[P1] O. Ben-Shahar and B. Arad, **Recovery of hyperspectral data from image**, US Patent US11085823B2.

Scientific Publications

- **Chapters in collective volumes and books**

[BC13] O. I. Shahar, G. Elkin, N. Alali, O. Ben-Shahar and coauthors, **79 AD Meets THE 21st Century: AI for Pompeii's Archaeological Reconstruction**, In *Reconstructing the Past: Artificial Intelligence and Robotics meet Cultural Heritage*, M. Pelillo, A. Zambrano and G. Gabriel Zuchtriegel (Ed.), Nocola Longobardi SLR, 2026 (in press).

[BC12] G. Elkin, O. I. Shahar, Y. Ohayon, N.. Alali, and O. Ben-Shahar, **Recognizing Artistic Style of Archaeological Image Fragments Using Deep Style Extrapolation**, In *Culture and Computing*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 15800, pp. 115-131, 2025.

[BC11] O. Ben-Shahar and R. Segev, **Feature integration theory** , In the *Encyclopedia of Animal Cognition and Behavior*, Vonk J., Shackelford T. (eds), Springer, Cham., 2021.

[BC10] E. Barnea and O. Ben-Shahar, **Contextual Object Detection with a Few Relevant Neighbors**, In the *Asian Conference on Computer Vision (ACCV)*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 11362, pp. 480-495, 2019.

[BC9] I. Kadar and O. Ben-Shahar, **SceneNet: A Perceptual Ontology for Scene Understanding**, In the *Proceedings of the International Workshop on Computer vision + ONTology Applied Cross-disciplinary Technologies (CONTACT)*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 8926, 2015.

[BC8] R. Mairon and O. Ben-Shahar, **A closer look at context: From coxels to the contextual emergence of object saliency**, In *European Conference on Computer Vision*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 8692, pp. 708-724, 2014.

[BC7] E. Barnea and O. Ben-Shahar, **Depth Based Object Detection from Partial Pose Estimation of Symmetric Objects**, In *European Conference on Computer Vision*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 8693, pp. 377-390, 2014.

[BC6] G. Ben-Yosef and O. Ben-Shahar, **A biologically-inspired theory for non-axiomatic parametric curve completion**, In *Asian Conference on Computer Vision*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 6493, pp. 346-359, 2011.

[BC5] O. Ben-Shahar and S.W. Zucker, **Good continuation in layers: Shading flows, color flows, surfaces, and shadows**, in *Information Beyond Inference*, L. Albertazzi, G.J. van Tonder, and D.Vishwanath (Ed.), MIT Press, 2010.

[BC4] O. Ben-Shahar, G. Li, and S.W. Zucker, **Connection Geometry, Color, and Stereo**, In *Computer Analysis of Images and Patterns*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 4673, pp. 13-198, 2007.

[BC3] O. Ben-Shahar and S.W. Zucker, **Boundary gestalt limits flow gestalt: The geometry of good continuation**, in *Visual thought: The depictive space of the mind*, L. Albertazzi (Ed.), John Benjamin Publishing Company, pp. 115-131, 2006.

[BC2] O. Ben-Shahar and S.W. Zucker, **Hue geometry and horizontal connections**, in *Vision and Brain*, S. Grossberg, L. Finkel, and D. Field (Eds.), Elsevier, pp. 753-772, 2004

[BC1] O. Ben-Shahar, P. Huggins, and S.W. Zucker, **On computing visual flows with boundaries: The case of shading and edges**, In *Biologically Motivated Computer Vision*, Springer's Lecture Notes in Computer Science (LNCS), Vol. 2525, pp. 189-198, 2002.

- **Journal articles (published or in press)**

[J55] R. Toren, M. Goder-Goldberger, S.A. Rozen, and O. Ben-Shahar, **Computational Flint Refitting** , *Journal of Archaeological Science: Reports (JASREP)*, 2026 (in press).

[J54] D. Zlotnikov and O. Ben-Shahar, **PIRATE - Precision Imaging Real-time Autonomous Tracker & Explorer**, *Journal of Marine Science and Engineering (JMSE)*, 14(6), 558, 2026.

[J53] R. Mairon and O. Ben-Shahar, **Stimulus Center Bias Persists Irrespective of Its Position on the Display**, *Journal of Eye Movement Research (JEMR)*, 18(6), 2025.

[J52] R. Mairon and O. Ben-Shahar, **The Polar Saccadic Flow Model:Re-modeling the Center Bias from Fixations to Saccades**, *Vision Research (VR)*, 228, p. 108546, 2025.

[J51] I. Git, M. Samina, S. Givon, R. Segev, M. Kiflawi, and O. Ben-Shahar, **Acoustic tracking of moving marine targets using a single autonomous surface receiver**, *Journal of Field Robotics*, 41(5), 1498-1520, 2024.

[J50] P. Harel, O.I. Shahar, and O. Ben-Shahar, **Pictorial and apictorial polygonal jigsaw puzzles from arbitrary number of crossing cuts**, *The International Journal of Computer Vision*, 132, pp 3428–3462, 2024.

[J49] E. Amar and O. Ben-Shahar, **Image Synthesis for Solar Flare Prediction**, *The Astrophysical Journal Supplement Series*, 271:29 (11pp), 2024.

[J48] S. Givon, R. Pickholtz, E.Y. Pickholtz, O. Ben-Shahar, M. Kiflawi and R. Segev, **Towards naturalistic neuroscience of navigation: opportunities in coral reef fish**, *Frontiers in Neural Circuits, Naturalistic Neuroscience*, 16, 2022.

[J47] S. Volotsky, O. Ben-Shahar, O. Donchin, R. Segev, **Recognition of natural objects in the archerfish**, *Journal of Experimental Biology*, 225, 2022.

[J46] Y. Koren, R. Mairon, I. Sofer, Y. Parmet, O. Ben-Shahar, S. Bar-Haim, **Vision, Cognition and Walking Stability in Young Adults**, *Scientific Reports*, 12:513, 2022.

[J45] S. Givon^{+}, M. Samina^{+}, O. Ben-Shahar*, and R.Segev*, **From Fish out of Water to New Insights on Navigation Mechanisms in Animals**, *Behavioural Brain Research*, Vol. 419, 2022. ($^{+}$,* = Equal contribution) Research featured in numerous scientific and popular science outlet, became viral in social media, and popularized in talk shows and entertainment shows like The Late Show and Saturday Night Live in the United States.

[J44] Y. Koren, R. Mairon, I. Sofer, Y. Parmet, O. Ben-Shahar, and S. Bar-Haim, **Gazing Down Increases Standing and Walking Postural Steadiness**, *Royal Society Open Science*, p.201556 8(3), p.201556, 2021.

[J43] E. Vinepinsky, L. Cohen, S. Perchik, O. Ben-Shahar, O. Donchin, and R. Segev, **Representation of Edges, Head Direction, and Swimming Kinematics in the Brain of Freely-Navigating Fish**, *Scientific Reports*, 10:14762, 2020.

[J42] A. Dutta, T. Lev-Ari, O. Barzilay, R. Mairon, A. Wolf, O. Ben-Shahar, and Y. Gutfreund, **Self-motion trajectories can facilitate orientation based figure-ground segregation**, *Journal of Neurophysiology (JNP)*, 123(3): pages 912-926, 2020.

[J41] B. Arad*, P. Kurtser*, E. Barnea, B. Harel, Y. Edan, and O. Ben-Shahar, **Controlled lighting and illumination-independent target detection for real-time cost-efficient applications. The case study of sweet pepper robotic harvesting**, *Sensors*, special issue on agricultural sensing and image analysis, Vol 19(6), p. 1390, 2019. (* = Equal contribution)

[J40] A. Reichenthal^{+}, M. Ben-Tov^{+}, O. Ben-Shahar*, and R. Segev*. **What pops out for you pops out for fish: four common visual features**, *Journal of Vision (JOV)*, 19(1):1, pp. 1-16, 2019 ($^{+,*}$ = Equal contribution)

[J39] E.Taig and O. Ben-Shahar, **Gradient Surfing - a New Deterministic Approach for Low Dimensional Global Optimization**, *Journal of Optimization Theory and Applications (JOTA)*, 180:855-878, 2019.

[J38] M. Ben-Tov, O. Ben-Shahar, R. Segev, **What a predator can teach us about visual processing: a lesson from the archerfish**, *Current Opinion in Neurobiology (CONEUR)*, 52, pp. 80-87, 2018.

[J37] J. Orlowski, O. Ben-Shahar, H. Wagner, **Visual search in barn owls: Task difficulty and saccadic behavior**, *Journal of Vision (JOV)*, 18(1):4, pp. 1-13, 2018.

[J36] G. Nir, B. Arad, O. Ben-Shahar, **Multi inducer grouping for curve completion: Perceptual and computational exploration**, *Journal of Vision (JOV)*, 17(9):8, pp. 1-15, 2017.

[J35] D.N. Dovencioglu, O. Ben-Shahar, P. Barla, and K. Doerschner, **Specular motion and 3D shape estimation** , *Journal of Vision (JOV)*, 17(6):3, pp. 1-15, 2017.

[J34] E. Barnea, R. Mairon,and O. Ben-Shahar, **Colour-agnostic shape-based 3D fruit detection for crop harvesting robots**, *Biosystems Engineering*, 146, pp. 57-70, 2016.

[J33] R. Ben-Ari and O. Ben-Shahar, **A computationally efficient tracker with direct appearance-kinematic measure and adaptive Kalman filter**, *Journal of Real-Time Image Processing*, 11, 271-285, 2016.

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