Yosi Keller
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Academic Appointments

04.12-	Associate Professor, Faculty of Engineering, Bar Ilan University
10.07- 04.12	Senior Lecturer, Faculty of Engineering, Bar Ilan University
07.03 – 12.06	Gibbs Assistant Professor, Department of Mathematics, Yale University, Program in Applied Mathematics

Research Interests
Deep Learning, signal and image processing, machine learning, biometrics.

Education

1999-2004	Ph.D., Electrical Engineering, Tel-Aviv university. "Advanced image registration techniques". Advisors: Amir Averbuch, Hanoch Ur. Summa Cum Laude.
1996-1998	MSc., Electrical Engineering, Tel Aviv University. "Efficient Inverse Problems Solutions for Image Processing". Advisors: Amir Averbuch, Hanoch Ur. Cum Laude.
1990-1993	B.Sc. in Electrical Engineering, Technion Institute of Technology, Cum Laude.

Graduate students

PhD students
Amir Egozy graduated, 2013 (BGU, joint with Hugu Gutrman),
Ayelet Heimowitz, graduated, 2016. Senior Lecturer, Ariel University.
Shay Gepstien, graduated, 2017.
Shachar Mahpud, graduated, 2019.
Yuval Nirkin, graduated, 2022 (joint with Tal Hassner).
Eran Dahan, graduated, 2024.
Shay Dekel
Gil Shapira
Ron Ferens

MSc students
Nissim Peled 2004 (joint with Amir Averbuch, TAU)
Itay Yelin 2004 (joint with Amir Averbuch,TAU)
Michael Chertok 2011,
Ayelet Heimowitz 2011
Yochai Yemini 2011 (Joint with Sharon Gannot,BIU)
Avi Septimus 2012
Shimrit Haber 2012
Chen Hajaj 2012
Yaron Hakuk (Joint with Orit Shefi,BIU) 2013
Sara Mirsky 2013
Udi Shusterman 2014
Sagi Mor 2014
Uri Okun 2014 (Joint with Israel Cohen, IIT),
Victor May (Joint with Yoel Shkolinsky, TAU), 2015.
Shay Zadik, 2016
Yoni Klien 2016 (Joint with Ido Bachelet, BIU)

Liad Shmargad, 2017
Ariel Navon, 2017
Elad Ben Baruch (Joint with Tammy Riklin Raviv, BGU), 2018
Noam Malali, 2019
Avi Ganzeli, 2019
Gabi Azhari (Joint with Gur Yaari, BIU), 2019
Shaked Hiba, 2021
Rephael Buzaglu
Sagi Habani
Ofer Idan
Ran Sandhus

Post Docs Dr. Yaniv Gur 2009.
Dr. Yoli Shavit 2020-2023.

Professional activities

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2025. Lead Area Chair.
- IEEE/CVF Winter Conference on Applications of Computer Vision 2025. Area Chair.
- The European Conference on Computer Vision (ECCV) 2024. Area Chair.
- IEEE/CVF Conference on Computer Vision and Pattern Recognition 2024. Area Chair.
- CVPR 2024, RetailVision workshop, organizer.
- IEEE/CVF Winter Conference on Applications of Computer Vision 2024. Area Chair.
- CVPR 2023, RetailVision workshop, organizer.
- IEEE/CVF Winter Conference on Applications of Computer Vision 2023. Area Chair.
- CVPR 2022, RetailVision workshop, invited speaker.
- The European Conference on Computer Vision (ECCV) 2022. Area Chair.
- IEEE/CVF Winter Conference on Applications of Computer Vision 2021 Area Chair.
- The International Conference on Computer Vision (ICCV) 2021. Area Chair.
- EU COST CA20118 member. Three-dimensional forest ecosystem.
- EU COST CA19130 organizing committee. Fintech and Artificial Intelligence in Finance.
- EU COST CA18232 member Mathematical models for interacting dynamics on networks.
- Associate Editor IEEE Transactions on Circuits and Systems for Video Technology.
- Associate Editor Elsevier Signal Processing.
- EUSICPO 2018 - Track chair of the Machine Learning area.
- IWBF 2016, 4th International Workshop on Biometrics and Forensics - Program Co-Chair.
- IPAM Large Scale Multimedia Search 2012 - Head of organizing committee.
- IEEE SSP09 Special session – Organizer.
- Special session, IEEE SSP07 – Organizer.
- SIAM Imaging 2006 mini-symposium – Organizer.

Research Grants

[1] Rescue MAGNET Consortium, Ministry of Industry and Commerce, State of Israel, 2008, 380,000 NIS for first year. co-PI.
[2] NET-HD MAGNET Consortium, Ministry of Industry and Commerce, State of Israel, 2009, PI.
[3] U.S. - Israel Binational Science Foundation Grant 2010139. co-PI with Guy Lebanon, Georgia Tech.
[4] Israeli–Taiwanese scientific Research Cooperation 2013-2015. co-PI with Shou-de Lin, National Taiwan University.

[5] MOD Biometrics 2014-2015.

[6] Infrastructure research grant, Israeli Ministry of Science 2015-2016. co-PI with Tal Hassner.

[7] U.S. - Israel Binational Science Foundation Grant. 2015-2019. co-PI with Amit Singer, Princeton.

[8] Ministry of Defence R&D grant. 2016. PI.

[9] Ministry Of Science, Technology & Space. 2017-2018. PI.

[10] Ministry Of Science, Czech-Israeli Cooperative Scientific Research. 2019-2022. PI.

[11] Ministry Of Science, Belarusian-Israeli Cooperative Scientific Research. 2019-2021. PI.

[12] Facebook research grant. 2020-2021. PI

[13] NEC research grant. 2022. PI

[14] Ministry Of Science, Slovak-Israel Joint Scientific Research Program. 2023-2024. PI.

Journal Papers

[1] Y. Keller, A. Averbuch "Fast gradient methods based global motion estimation for video compression", IEEE Transactions on Circuits and System for Video Technology, Vol. 13, No. 4, pp. 300-309, 2003.

[2] Y. Keller, A. Averbuch, "Fast motion estimation using bi-directional gradient methods". IEEE Transactions on Image Processing. Vol. 13, No. 8, pp. 1042- 1054, 2004.

[3] Y. Keller, A. Averbuch, M. Israeli, "A PseudoPolar FFT technique for Translation, Rotation and Scale-Invariant image registration". IEEE Transactions on Image Processing. Vol. 14, No. 1, pp. 12- 22, 2005.

[4] Y. Keller and Y. Shkolnisky, A. Averbuch, "The angular difference function and its application to image registration". IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 27, No. 6, pp. 969-976, 2005.

[5] Y. Keller, A. Averbuch, "Image Registration Using Implicit Similarity and Pixel Migration", IEEE Transactions on Pattern Analysis and Machine Intelligence. Vol. 28, No. 5, pp. 794-801, 2006.

[6] Y. Keller and Y. Shkolnisky, "A Signal Processing Approach to Symmetry Detection". IEEE Transactions on Image Processing, Vol. 15, No. 8, 2006.

[7] Y. Keller and Y. Shkolnisky, A. Averbuch, "Algebraically accurate 3-D rigid registration". IEEE Transactions on Signal Processing, Vol. 54, No. 11, pp. 4323- 4331, 2006.

[8] S. Lafon, Y. Keller and R. R. Coifman, "Data fusion and multi-cue data matching by diffusion maps". IEEE Transactions on Pattern Analysis and Machine Intelligence. Vol. 28, No. 11, pp. 1784- 1797, 2006.

[9] Y. Keller, A. Averbuch, "A Projection-Based Extension of the Phase Correlation Method", Signal Processing, Volume 87, Issue 1, January 2007, Pages 124-133.

[10] Y. Keller, A. Averbuch, "Global parametric image alignment via high-order approximation". Computer Vision and Image Understanding, Vol. 109, No. 3, pp. 244-259, 2008.

[11] M. Chertok, Y. Keller, "Spectral Symmetry Analysis". IEEE Transactions on Pattern Analysis and Machine Intelligence. Vol. 32, No. 7, pp. 1227-1238, 2010.

[12] Y. Keller, S. Lafon, R. R. Coifman and Steven Zucker "Audio-Visual Group Recognition using Diffusion Maps". IEEE Transactions on Signal Processing, Vol. 58, No. 1, pp. 403- 413, 2010.

[13] A. Egozi, Y. Keller and H. Guterman, "Improving Shape retrieval by Spectral Matching and Meta Similarity". IEEE Transactions on Image Processing, Vol. 19, No. 5, pp. 1319 - 1327, 2010.

[14] A. Bermanis, A. Averbuch and Y. Keller, "3-D Symmetry Detection using the Pseudo-Polar Fourier Transform". International Journal of Computer Vision, Vol. 90, No. 2, pp. 166-

182, 2010
[15] M. Chertok and Y. Keller, “Efficient high order matching”. IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 32 No. 12, pp. 2205-2215, 2010. **Spotlight Paper for the December 2010 issue**.
[16] Y. Keller and Y. Gur, “A Diffusion Approach to Network Localization”. Signal Processing, IEEE Transactions on, vol.59, no.6, pp.2642-2654, June 2011.
[17] Tal Darom and Yosi Keller, “Scale Invariant Features for 3D Mesh Models”. Image Processing, IEEE Transactions on, vol.21, no.5, pp.2758-2769, May 2012.
[18] A. Egozi, Y. Keller and H. Guterman, “A probabilistic approach to spectral graph matching”. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 35, no. 1, pp. 18-27, Jan. 2013.
[19] Y. Keller, “A probabilistic approach to Integer Least Squares and MIMO decoding”. Submitted.
[20] S. Gepshtein and Y. Keller, “Image completion by diffusion maps and spectral relaxation”. Image Processing, IEEE Transactions on, vol.22, no.8, pp. 2983-2994, 2013.
[21] S. Haber and Y. Keller, “A probabilistic graph-based framework for multi-cue visual tracking”. Image Processing, IEEE Transactions on, vol.23, no.5, pp.2291,2301, May 2014.
[22] Septimus, A.; Keller, Y.; Bergel, I., “A Spectral Approach to Inter-Carrier Interference Mitigation in OFDM Systems”, Communications, IEEE Transactions on, vol.62, no.8, pp.2802-2811, Aug. 2014
[23] U. Shusterman and Y. Keller, “Automatic Large Margin Music Genre Classification in Local Diffusion Spaces”. Submitted.
[24] S. Gepshtein, Y. Keller, “Sensor Network Localization by Augmented Dual Embedding”. Signal Processing, IEEE Transactions on, vol.63, no.9, pp.2420-2431, May, 2015.
[25] T. Stern, R. Aviram, C. Rot, T. Galili, Amnon Sharir, Noga Kalish Achrai, Yosi Keller, Ron Shahar and Elazar Zelzer, “Isometric scaling in developing long bones is achieved by an optimal epiphyseal growth balance”. PLOS Biology, vol 13, August 2015.
[26] Tal Darom and Yosi Keller, “Automatic group registration of meshes by weighted spectral synchronization”. Submitted.
[27] V. May, Y. Keller, N. Sharon, and Y. Shkonisky. “An algorithm for improving non-local means operators via low-rank approximation”. in IEEE Transactions on Image Processing, vol. 25, no. 3, pp. 1340-1353, March 2016.
[28] A. Heimowitz and Y. Keller, "Image Segmentation via Probabilistic Graph Matching," in IEEE Transactions on Image Processing, vol. 25, no. 10, pp. 4743-4752, Oct. 2016.
[29] Y. Yeminy, S. Gannot and Y. Keller, “Single Microphone Speech Separation by Diffusion-based HMM estimation”. EURASIP Journal on Audio Speech and Music Processing. vol. 2016, no. 1.
[30] Y. Klein, R. Djaldetti, Y. Keller, I. Bachelet, “Motor dysfunction and touch-slang in user interface data Motor dysfunction and touch-slang in user interface data”. Scientific Reports 7, Article number: 4702 (2017).
[31] S. Mahpod, Y. Keller, “Kinship verification using multiview hybrid distance learning”. Computer Vision and Image Understanding. Volume 167, 2018, Pages 28-36.
[32] S. Gepshtein, Y. Keller, “Iterative Spectral Independent Component Analysis”. Signal Processing. Volume 155, 2019, Pages 368-376.
[33] O. Sendik, Y. Keller, “DeepAge: Deep Learning of face-based age estimation”. Signal Processing: Image Communication, Vol: 78, 2019, Page: 368-375.
[34] A. Navon and Y. Keller, “Financial Time Series Prediction Using Deep Learning”. arXiv:1711.04174.
[35] S. Mahpod, and Y. Keller, “Auto-ML Deep Learning for Rashi Scripts OCR”. arXiv: 1811.01290.
[36] Y. Nirkin, Y. Keller and T. Hassner “FSGAN: Photo-realistic model-free video face swapping and reenactment”. The IEEE International Conference on Computer Vision (ICCV).

2019. (25% acceptance rate).
[37] E. Dahan and Y. Keller, "A Unified Approach to Kinship Verification," in IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 43, no. 8, pp. 2851-2857, 1 Aug. 2021. arXiv: 2009.05871.
[38] S. Mahpod, R. Das, E. Maiorana, Y. Keller, and P. Campisi, “Facial landmarks localization using cascaded neural networks”. Computer Vision and Image Understanding, Volume 205, 2021. arXiv: 1805.01760.
[39] E. Ben Baruch and Y. Keller, “Joint Detection and Matching of Feature Points in Multimodal Images”. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 44, no. 10, pp. 6585-6593, 1 Oct. 2022. arXiv: 1810.12941.
[40] Y. Nirkin, Tal Hassner, Y. Keller, and L. Wolf, “DeepFake Detection Based on Discrepancies Between Faces and their Context”. IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 44, no. 10, pp. 6111-6121, 1 Oct. 2022. arXiv: 2008.12262.
[41] Y. Shavit, R. Ferens and Y. Keller, “Learning Multi-scene Absolute Pose Regression with Transformers”. arXiv:2103.11468. ICCV 2021 Oral presentation (2.5% acceptance rate).
[42] N. Malali, and Y. Keller, “Learning to Embed Semantic Similarity for Joint Image-Text Retrieval.”. IEEE Transactions on Pattern Analysis and Machine Intelligence. 2022. 44(12): 10252-10260.
[43] G. Azhari, S. Waldman, N. Ofer, Y. Keller, S. Carmi and G. Yaari, “Decomposition of individual SNP patterns from mixed DNA samples”. Forensic Sci. 2022, 2(3), 455-472.
[44] E. Dahan and Y. Keller “Improving Kinship Verification by Gender and Age Disentanglement". Submitted.
[45] R. Bouzaglo and Y. Keller “Fingerprint Synthesis and Reconstruction using Generative Adversarial Networks”. Submitted.
[46] Y. Shavit and Y. Keller “Camera Pose Auto-Encoders for Improving Pose Regression”. In Proceedings of the European Conference on Computer Vision (ECCV). 2022. pp 140–157.
[47] R. Ferens, Y. Keller. “HyperPose: Camera Pose Localization using Attention Hypernetworks”. arXiv: 2303.02610.
[48] O. Idan, Y. Shavit, Yosi Keller*, Y. Keller. “Learning to Localize in Unseen Scenes with Relative Pose Regressors”. arXiv: 2303.02717.
[49] Y. Nirkin, Tal Hassner and Y. Keller, “FSGANv2: Better Subject Agnostic Face Swapping and Reenactment”. IEEE Transactions on Pattern Analysis and Machine Intelligence. Jan. 2023, pp. 560-575, vol. 45. arXiv: 1908.05932.
[50] T. Polaseka, M. Cadık, Y. Keller, B. Benes. “Vision UFormer: Long-Range Monocular Absolute Depth Estimation”. Computers & Graphics. Volume 111, April 2023, Pages 180-189.
[51] S. Dekel, Y. Keller and A. Bar-Hillel, “Deep Convolutional Tables for Efficient Visual Classification”. **Accepted**. IEEE Transactions on Neural Networks and Learning Systems.
[52] E. Dahan and Y. Keller, “Age-Invariant Face Embedding using the Wasserstein Distance”. Submitted. arXiv: 1908.05932.
[53] G. Shapria and Y. Keller. “FaceCoresetNet: Differentiable Coresets for Face Set Recognition”. The 38th AAAI Conference on Artificial Intelligence (AAAI-24). 23.75% acceptance rate.
[54] A. Moreshet and Y. Keller, “Attention-Based Multimodal Image Matching”. **Accepted**. Computer Vision and Image Understanding. arXiv:2103.11247.
[55] S. Hiba and Y. Keller “Hierarchical Attention-based Age Estimation and Bias Estimation”. arXiv: 2103.09882. in IEEE Transactions on Pattern Analysis & Machine Intelligence, vol. 45, no. 12, pp. 14682-14692, 2023.
[56] Y. Shavit, R. Ferens and Y. Keller "Coarse-to-Fine Multi-Scene Pose Regression with Transformers". IEEE Transactions on Pattern Analysis and Machine Intelligence. vol. 45, no. 12, pp. 14222-14233, Dec. 2023**.**
[57] S. Dekel, Y. Keller, M. Cadık. “Estimating Extreme 3D Image Rotation with Transformer Cross-Attention”. arXiv: 2303.02615. IEEE/CVF Conference on Computer Vision and Pattern Recognition 2024.

[58] R. Ferens, Y. Shavit and Y. Keller, “Learning Single and Multi-Scene Camera Pose with Transformer Encoders”. **Accepted**. Computer Vision and Image Understanding. arXiv:2103.11477.

Book Chapters

[1] M. Chertok, Y. Keller, “Spectral Symmetry Analysis”., In “Studies in Computational Intelligence", 2012, Volume 386, Computational Intelligence Paradigms in Advanced Pattern Classification, Pages 113-144”, edited by Marek R. Ogiela. Springer-Verlag, 2011.

Conference Papers

[1] Y. Keller, A. Averbuch, “FFT based image registration”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2002, Orlando, USA, May 2002.
[2] Y. Keller, A. Averbuch, “Fast motion estimation using bi-directional gradient methods” IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2002, Orlando, USA, May 2002.
[3] Y. Keller, A. Averbuch, “Fast gradient methods based global motion estimation for video Compression” International Conference on Image Processing (ICIP) 2002, Rochester, USA, September 2002.
[4] Y. Keller, A. Averbuch, “Image Registration Using Parametric surfaces and Pixel Diffusion”, International Conference on Curves and Surfaces, Saint-Malo France, June 2002.
[5] Y. Keller, A. Averbuch, “Robust Multi-Sensor Image Registration Using Pixel Migration”, IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM) 2002, Washington D.C, USA. August 2002.
[6] Y. Keller, A. Averbuch, “Efficient Global Motion Estimation for MPEG4 Video Compression”. The 22nd IEEE Conference in Israel, Tel-Aviv, December 2002.
[7] Y. Keller, A. Averbuch, “Fast global motion estimation for MPEG-4 video compression”, PACKET VIDEO 2003, Nantes, France, April 2003.
[8] Y. Keller, A. Averbuch, “Implicit similarity: a new approach to multi-sensor image registration”, In Proc. of CVPR'03, Madison, USA, June 2003.
[9] O. Miller, A. Averbuch, and Y. Keller, “Automatic Adaptive Segmentation of Moving Objects Based on Spatio-Temporal Information”, In Proc. of DICTA2003, Sydney, Australia, December 2003.
[10[O. Miller, A. Averbuch, and Y. Keller, “Unsupervised Segmentation of Moving MPEG Blocks Based on Classification of Temporal Information”, In Proc. of DICTA2003, Sydney, Australia, December 2003.
[11] Y. Keller, Y. Shkolnisky, M. Israeli, A. Averbuch “Algebraically Accurate Rotation Estimation”, In Proc. of SIAM Conference on Imaging Science (IS04), Salt Lake City, USA, May 2004.
[12] Y. Keller, Y. Shkolnisky “An algebraic approach to symmetry detection”, In Proc. of 17th International Conference On Pattern Recognition (ICPR2004), Cambridge, UK, August 2004.
[13] Y. Keller, A. Averbuch “Robust Phase Correlation”, In Proc. of 17th International Conference On Pattern Recognition (ICPR2004), Cambridge, UK, August 2004.
[14] Y. Keller, A. Averbuch “Pseudo-polar based estimation of large translations rotations

and scalings in images", In Proceedings of the IEEE Workshop on Motion and Video Computing, Breckenridge, Colorado, January 2005.
[15] A. Elad, Y. Keller and R. Kimmel, "Texture Mapping via Spherical Multi-Dimensional Scaling", In Proc of the 5th International Conference on Scale Space Methods and PDE methods in Computer Vision, Hofgeismar, Germany, April 7-9, 2005.
[16] Y. Keller, Y. Shkolnisky and A. Averbuch, "Algebraically Accurate Volume Registration using Euler's Theorem and the 3-D Pseudo-polar FFT". In Proc. of CVPR'05, San-Diego, USA, June 2005.
[17] Y. Keller, Y. Shkolnisky and A. Averbuch, "A non-Cartesian FFT approach to image alignment". International Conference on Image Processing (ICIP) 2005, vol.3, pp.50-53, Genova, Italy, September 2005.
[18] Y. Keller, Y. Shkolnisky and A. Averbuch, "Accurate Multi-Dimensional Alignment", International Conference on Image Processing (ICIP) 2005, vol.3 pp.III-1052-5, Genova, Italy, September 2005.
[19] Y. Keller, A. Averbuch, "Robust Image alignment using third-order global motion estimation". British Machine Vision Conference (BMVC), Oxford, UK, September 2005.
[20] Y. Keller, S. Lafon and M. Krauthammer, "Protein clusters analysis via directed diffusion". The Fifth Georgia Tech International Conference on Bioinformatics, Georgia, USA, November 2005.
[21] Y. Keller, N. Peled, A. Averbuch, and Y. Shkolnisky, "Optical Snow Analysis Using the 3D-Xray Transform". In Proc. of SIAM Conference on Imaging Science (IS06), Minneapolis, Minnesota, USA, May 2006.
[22] R. Coifman, Y. Keller, S. Lafon, M. Maggioni, A. Szlam, F. Warner and S. W Zucker, "Geometries of sensor outputs, inference and information processing". SPIE 2006.
[23] E. Liberty, M. Almagor, S. Zucker, Y. Keller, and Ronald Coifman, "Scoring Psychological Questionnaires using Geometric Harmonics". Snowbird Learning workshop 2007.
[24] Y. Yeminy, S. Gannot and Y. Keller, "Speech Enhancement Using a Multidimensional Mixture-Maximum Model", International Workshop on Acoustic Echo and Noise Control (IWAENC), Tel- Aviv, Israel, Aug. 2010.
[25] Edmond Boyer, Alexander Bronstein, Michael Bronstein, Benjamin Bustos, T. Darom, Radu Horaud, Ingrid Hotz, Y. Keller, Johannes Keustermans, Artiom Kovnatsky, Roee Litman, Jan Reininghaus, Ivan Sipiran, Dirk Smeets, Paul Suetens, Dirk Vandermeulen, Andrei Zaharescu and V. Zobel. "SHREC 2011: robust feature detection and description benchmark, Workshop on 3D Object Retrieval (3DOR)". Eurographics, pages 71-78, 2011.
[26] T. Darom and Y. Keller, "Spectral Analysis Driven Sparse Matching of 3D Shapes", 5th Eurographics Workshop on 3D Object Retrieval 2012, May 13, 2012, Cagliari, Italy.
[27] Tal Darom, Yaniv Gur, Chen Hajaj, Yosi Keller, "Automatic Anatomical Shape Correspondence and Alignment Using Mesh Features", International Symposium on Biomedical Imaging (ISBI), 2015.
[28] Jiwen Lu, Junlin Hu, Liong, V.E.; Xiuzhuang Zhou; Bottino, A., Ul Islam, I., Figueiredo Vieira, T., Xiaoqian Qin, Xiaoyang Tan, Songcan Chen, Mahpod, S., Keller, Y., Lilei Zheng; Idrissi, K., Garcia, C., Duffner, S., Baskurt, A., Castrillon-Santana, M., Lorenzo-Navarro, J. "The FG 2015 Kinship Verification in the Wild Evaluation", 11th IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG), 2015, vol.1, pp.1-7, 4-8 May 2015.
[29] N. Ofir, S. Silberstein, D. Rozenbaum, Y. Keller and S. D. Bar, "Registration and Fusion of Multi-Spectral Images Using a Novel Edge Descriptor," 2018 25th IEEE International Conference on Image Processing (ICIP), Athens, Greece, 2018, pp. 1857-1861.
[30] N. Ofir, S. Silberstein, H. Levi, D. Rozenbaum, Y. Keller and S. Duvdevani Bar, "Deep Multi-Spectral Registration Using Invariant Descriptor Learning," 2018 25th IEEE International Conference on Image Processing (ICIP), Athens, Greece, 2018, pp. 1238-1242.
[31] N. Ofir and Y. Keller, "Multi-scale Processing of Noisy Images using Edge Preservation

Losses," 2020 25th IEEE International Conference on Pattern Recognition (ICPR), Milan, 2020.

Patents

[1] E. Liberty, S. Zucker, Y. Keller, M. Maggioni, R.R. Coifman, F. Geshwind, *Methods for filtering data and filling in missing data using nonlinear filtering,* US Patent # 20070214133 2007.
[2] R. R. Coifman, F. Geshwind, A. Coppi, W. Fateley, R. Deverse, Y. Keller, A. Schclar. *Systems, methods and devices for multispectral imaging and non-linear filtering of vector valued data,* US Patent # 7589772
[3] M Chertok, A Pinhas, Y Keller, *Method and a system for organizing an image database*, US Patent 8,401,312