Roey Mechrez

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https://roimehrez.github.io/

Personal Data

PhD from the Technion-Israel, where I worked with Prof. Lihi Zelnik-Manor. My work lies in the intersection of, computer vision, and deep learning. Specifically, my interests are in realistic image generation, manipulation and transformation. My research focuses on tools, algorithms, and new paradigms for photo editing and synthesis.

Nationality	The Netherlands, Israel
Languages	Hebrew (native), English (fluent)

Education

2015 - 2019	**PhD in Electrical Engineering**, *Technion – Israel Institute of Technology*
Research area	Computer Vision, Image editing and synthesis, Tracking and matching and Deep learning.
Supervisor	Prof. Lihi Zelnik-Manor.
Co-Supervisor	Dr. Eli Shechtman (Adobe Research).
2012 - 2014	**M.Sc in Biomedical Engineering**, *Tel-Aviv University*
Thesis title	Patch-based Segmentation for MS lesions, link.
Supervisor	Prof. Hayit Greenspan and Prof. Jacob Goldberger (*Bar-Ilan University)*
Score	95.1(/100) Cum Laude; link
	We proposed a fully automatic method for segmentation of Multiple sclerosis (MS) lesions in brain MRI. The method is based on similarities between multi-channel patches.
2010 - 2013	**B.Sc in Biomedical Engineering**, *Tel-Aviv University*
Score	91.1(/100) Cum Laude; link

Publications

2019 **Saliency Driven Image Manipulation** (extended version)
Mechrez, R., Shechtman, E. and Zelnik-Manor, L.,
Machine Vision and Applications (special issue: IEEE WACV'18). link

2018 **Adversarial Feedback Loop**
Shama, F., **Mechrez, R.**, *Shoshan, A., and Zelnik-Manor, L.,*
submitted to ICCV'19. arXiv.

2018 **Dynamic-Net: Tuning the Objective Without Re-training**
Shoshan, A., **Mechrez, R.**, *and Zelnik-Manor, L.,*
submitted to ICCV'19. arXiv.

2018 **Improving CNN Training using Disentanglement for Liver Lesion Classification in CT**
Ben-Cohen, A., **Mechrez, R.**, *Yedidia, N. and Greenspan, H.,*
to appear in EMBC arXiv

2018 **The 2018 PIRM Challenge on Perceptual Image Super-resolution** link
Blau, Y.,* **Mechrez, R.***, *Timofte, R., Michaeli, T. and Zelnik-Manor, L.,*
ECCV workshop. arXiv.

2018 **The Contextual Loss for Image Transformation with Non-Aligned Data.** link
Mechrez, R., Talmi, I*. and Zelnik-Manor, L., ECCV. arXiv.*
Selected for full **oral** presentation at the conference. Acceptance rate 2.4%.
(60 papers out of 3000 submissions.)

2018 **Maintain Natural Image Statistics with the contextual loss.** link
Mechrez, R., Talmi, I*., Shama, F. and Zelnik-Manor, L., ACCV. arXiv.*

2018 **Saliency Driven Image Manipulation.** Best paper – people choice
Mechrez, R., Shechtman, E. and Zelnik-Manor, L., WACV . link

2017 **Photorealistic Style Transfer with Screened Poisson Equation.**
Mechrez, R., Shechtman, E. and Zelnik-Manor, L., BMVC. link

2017 **Template Matching with Deformable Diversity Similarity.** (Spotlight) link
Talmi, I.,* **Mechrez, R.*** *and Zelnik-Manor, L., CVPR.*
Selected for a **spotlight** presentation at the conference. Acceptance rate 8%.
(215 papers selected for spotlight oral or full oral out of 2620 submissions.)

2016 **Patch-based Segmentation with Spatial Consistency: application to MS Lesions in Brain MRI.**
Mechrez, R., Goldberger, J. and Greenspan, H., in International Journal of Biomedical Imaging. link

2015 **MS lesion segmentation using a multi-channel patch-based approach with spatial consistency.**
Mechrez, R., Goldberger, J. and Greenspan, H., in SPIE Medical Imaging. International Society for Optics and Photonics. link

Scholarships and Awards

2019 **Excellence Scholarship Faculty Funding**
The Technion Israel

2018 **KLA academic excellence award - for the WACV'18 paper**
The Technion Israel link

2018 **KLA outstanding conference papers award - for the ECCV'18 paper**
The Technion Israel

2018 **Best papers (people choice) - WACV'18**
IEEE Winter Conf. on Applications of Computer Vision link

2018 **WACV PhD Forum – Traveling Grant**
IEEE Winter Conf. on Applications of Computer Vision link

2017 **The Andrew and Erna Finci Viterbi Fellowship Program**
The Technion Israel link

2017 **Traveling grant - Workshop on Machine Learning and Computer Vision**,
Janelia Research Campus link

2014 **Excellence in Research Studies Award**,
Tel-Aviv University School of Engineering link

2013 **Scholarship for Meritorious Achievement in B.Sc studies**
Tel-Aviv University School of Engineering.

2012 **Dean's List**, *Tel-Aviv University School of Engineering.*

2009 **Dean's List**, *Tel-Aviv University School of Engineering.*

Service

2018 **Organizing PIRM: Workshop and Challenge on Perceptual Image Restoration and Manipulation** in conjunction with ECCV. website.

2019 **CVPR** - Reviewer

2018 **ECCV** - Reviewer

2018 **ICCV** - Reviewer

2018 **CVPR** - Outstanding Reviewers

Experience

Present	**Senior Research Scientist**, *Artomatix*, London, UK.
Present	**Senior Research Scientist**, *BeyondMinds*, Tel-Aviv, Israel.
2019 (March)	**Lecturer: CNN for Computer Vision Winter School**, *The Technion* Based on the seminal course by Stanford University – CS231n. link
2016 - 2018	**Teaching Assistant**, *The Technion* Computer Vision Algorithms (EE) 2017, 2018.
2015 - 2019	**Undergraduate Project Mentor**, *The Technion* I have mentored more then 15 projects in the field of computer vision and deep learning.
2017 (May-July)	**Researcher intern**, *IBM Research Haifa* Computer Vision and Augmented Reality group Supervisor: Leonid Karlinsky, PhD
2016 - 2017	**Pixel Club coordinator**, *The Technion* a joint CS and EE colloquium on computer vision, image processing and computer graphics, and any other "pixel" oriented field. website.
2015 - 2016	**Teaching Assistant**, *The Technion* Data Structures and Algorithms
2013 - 2015	**Algorithm Engineer**, *RSIP Vision - Tel-Aviv* image processing, computer vision, image registration and heart conduction models.
2012 - 2014	**Teaching Assistant**, *Tel-Aviv University* Pattern Recognition, Introduction to Chemistry, Medical Signals Processing laboratory (NMR, MRI, ultrasound and imaging).

Computer Skills

Scientific	Experience with Python and MATLAB. Deep learning with TensorFlow, pyTorch and MatConvNet
Programming	Basic Knowledge of C and C++

Military Service

2003 - 2009	Full military service as a Air Traffic Controller (ATC). Still in active reserve duty as ATC (Major). Commander of sub-unit of 30 soldiers; operational flight; control system Characterization; leading of system implementation process; in charge of officers training