Roey Mechrez

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https://roimehrez.github.io/

Personal Data

I'm currently pursuing a PhD at the department of Electrical Engineering at the Technion. I work at the Computer Graphics & Multimedia lab under supervision of Prof. Lihi Zelnik-Manor. My research interests are in the areas of Computer Vision and Image Processing. More specifically I am interested in photorealistic image synthesis and manipulation, image editing, style transfer, image similarity and deep learning.

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

Education

2015 - present	**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

2018   **Improving CNN Training using Disentanglement for Liver Lesion Classification in CT**
Ben-Cohen, A., **Mechrez, R.,** *Yedidia, N. and Greenspan, H.,*
under review at ISBI. arXiv

2018   **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*. and Zelnik-Manor, L., Accepted to 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

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.

2018   **ECCV** - Reviewer

2018   **CVPR** - Outstanding Reviewers

Experience

2016 - present   **Teaching Assistant**, *The Technion*
Computer Vision Algorithms (EE) 2017, 2018.

2015 - present   **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**, MatConvNet (and basic pyTorch and Torch (Lua))
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