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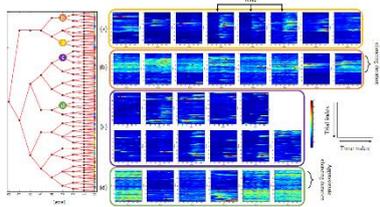
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SIPL Newsletter – Issue 7, November 2015

News from the Signal and Image Processing Laboratory
Department of Electrical Engineering, Technion, Israel

Join our Facebook page at:
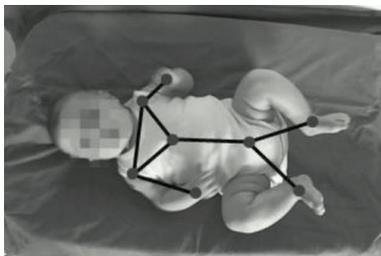https://www.facebook.com/sipltech?ref=hl

SIPL Activities

In a new paper by Gal Mishne, Prof. Ronen Talmon and Prof. Ron Meir with researchers from the Technion Medical School and researchers from Yale University, they present a computational method based on geometry learning for **analyzing neuronal activity recorded in-vivo from awake animals**. They show that their new analysis enables, solely from measurements in a completely data-driven manner, to discover neuronal groups associated with specific behavior, such as reaching and grabbing.
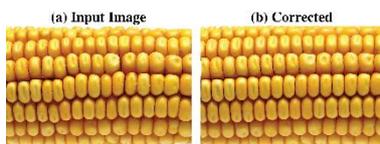
In a joint work of Prof. Tomer Michaeli with MIT and Weizmann Institute researchers, a technique for **magnifying or smoothing out small variations in digital images** was developed. More information and a SIGGRAPH Asia 2015 paper describing this algorithm can be found here.

Two *SIPL* students have presented a paper in the IEEE International Conference on Image Processing (ICIP 2015) in Quebec: **Image Quality Assessment based on DCT Subband Similarity**. A special guest of this conference was the famous Lenna (Söderberg). You can see photos of Lenna from the conference here.

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SIPL is cooperating with Dr. Hagit Friedman from the Faculty of Social Welfare & Health Sciences at the University of Haifa and with her colleagues in the Sheba Medical Center in the area of **automatic detection of development disorders in infants**. Two undergraduate projects related to this activity have been completed lately - detection of development disorders in infants based on their crying & detection of development disorders in infants based on 3D movement analysis using Kinect.

SIPL students have started to work with the Myo Armband for **real time EMG signal acquisition**. An EMG signal records electrical activity produced by skeletal muscles.
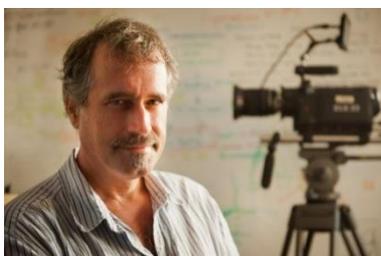
Conferences and Events

Machine Vision 2015 Conference will take place March, 16-17 in Tel-Aviv. More details can be found here.

Israel Computer Vision Day will take place April, 17 in the Interdisciplinary Center Herzliya.

There are always some interesting seminars in the Pixel Club and SP&S seminar.

## Other Signal and Image Processing News (more in our Facebook page)

Alan Bovik's team from the University of Texas wins **Emmy award for the SSIM image quality measure**. "SSIM is now the most widely-used perceptual video quality measure, used to test and refine video quality throughout the global cable and satellite TV industry. It directly affects the viewing experiences of tens of millions of viewers daily". More information can found here.

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In a recent paper, researchers at the University of Tubingen suggest an algorithm based on deep networks for **transforming any photo into an image that mimics the painting style of famous artists**. More information can be found here.


Google and MIT researchers developed an algorithm that **removes obstructions (reflecting or occluding elements such as windows and fences) from photos**. A demo of this algorithm can be found here. More information and a SIGGRAPH2015 paper describing this algorithm can be found here.
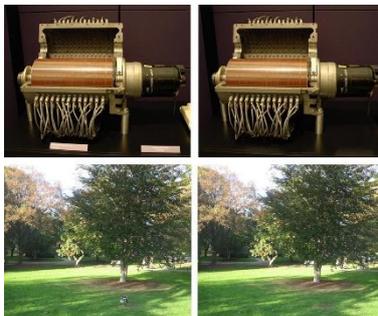

Princeton researchers developed a technique for **detecting (and removing) distractors from images**. More information and a CVPR 2015 paper describing this algorithm can be found here.
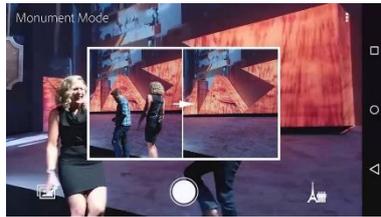

Google has open sourced its deep learning engine, called TensorFlow. More information can be found here.
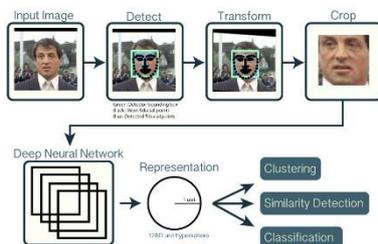
OpenFace is a new **open source facial recognition program** based on Google's FaceNet research with state-of-the-art results.
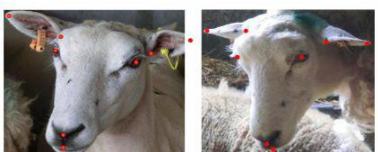
In a recent paper, researchers from the University of Cambridge present a method for **facial localization on sheep**. More information can be found here.

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A new "Monument Mode" by Adobe **crops out tourists, cars, and other moving objects** that might be blocking your shot of famous landmarks. A demo of this feature can be found here.

A new service allows **on-line video analysis**. Just upload your video and interactively watch the results.

Light L16 is **a revolutionary point-and-shoot camera** that packs 16 cameras that simultaneously expose photos at different focal lengths. The resulting images are combined into high-resolution, 52-megapixel photos.

SIPL recent industry collaborators

CEVA   cMeSafe   CONFEED Controlled Feeding Systems   dvtel   Elbit Systems

GIVEN IMAGING   harmonic   intel   IBM Research   Pronto.ly

RAFAEL SMART AND TO THE POINT   Linguistech   SAMSUNG

Comments and suggestions: sipl-newsletter@ee.technion.ac.il