Hossein Talebi

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Objective

Seeking a full time position that allows me to work with leading researchers and engineers in solving practical problems related to signal and image processing**.**

Residency Status

Permanent Resident on Green Card

Education

- **University of California, Santa Cruz (2010-Present)**
  Ph.D Candidate, Electrical Engineering
  - Research Interests:
    - Image/Video Restoration and Enhancement (Filtering, Denoising, Super-resolution)
    - Computational Photography
    - Statistical Signal/Image Processing and Inverse Problems

- **Isfahan University of Technology (2007-2010)**
  M.Sc. Electrical Engineering

- **Isfahan University of Technology (2003-2007)**
  B.Sc. Electrical Engineering

Work Experience

- **Software Engineer Intern at Google, Mountain View (January-April 2015)**
  - ✓ Worked on an image enhancement project.

- **Image Processing Intern at Dolby Labs, Sunnyvale (June-November 2014)**
  - ✓ Worked on a project related to video upscaling and developed an efficient linear up-scalar for high dynamic range images.
  - ✓ Worked on Dolby video codec pipeline and developed a new multivariate SDR (Standard Dynamic Range) to VDR (Video Dynamic Range) predictor.

Academic Research Projects

- **Graduate Student Researcher**, UC Santa Cruz
  Advisor: **Peyman Milanfar**
  - ✓ **How to SAIF-ly Boost Denoising Performance** (Project Webpage: http://www.soe.ucsc.edu/~htalebi/SAIF.php)
    Developed the SAIF (Spatially Adaptive Iterative Filtering) algorithm, a new strategy to control the denoising strength *locally* for any spatial domain method.
  - ✓ **Global Image Denoising** (Project Webpage: http://www.soe.ucsc.edu/~htalebi/GLIDE.php)
    The specific contribution we have made is to develop a practical algorithm to compute a global filter which in effect uses *all* the pixels in the input image to denoise every single pixel.
  - ✓ **Nonlocal Image Editing** (Project Webpage: http://www.soe.ucsc.edu/~htalebi/NLEditing.html)
    Developed a new image editing tool, capable of important applications such as edge-aware sharpening, tone manipulation, abstraction and edit propagation.

- **Research Assistant, Isfahan University of Technology**
  Advisor: **Shadrokh Samavi**

  ✓ **Multi-layered Image Compression**
  Developed a new image compression method using wavelet and contourlet transforms.

Publications

Journals

- H. Talebi, P. Milanfar, "*Nonlocal Image Editing*", IEEE Transactions on Image Processing, vol. 23, No. 10, pp. 4460-4473, October 2014.
- H. Talebi, P. Milanfar, "*Global Image Denoising*", IEEE Transactions on Image Processing, vol. 23, No. 2, pp. 755-768, February 2014.
- H. Talebi, X. Xhu P. Milanfar, "*How to SAIF-ly Boost Denoising Performance*", IEEE Transactions on Image Processing, vol. 22, No. 4, pp. 1470-1485, April 2013.

Patents

- H. Talebi, G. Su, "*Weighted Multi-Band Cross Channel Predictor*", United States Patent Application, No.14/563,279, filed December, 2014, Patent Pending.

Conferences

- H. Talebi, G. Su, Y. Peng , "*Fast HDR Image Upscaling Using Locally Adapted Linear Filters*", SPIE Conference on Digital Photography and Mobile Imaging, San Francisco, CA, February 2015.
- H. Talebi, P. Milanfar, "*Global Denoising is Asymptotically Optimal*", Proceedings of International Conference on Image Processing (*ICIP*), Paris, October 2014.
- H. Talebi, P. Milanfar, "*Global Image Editing Using the Spectrum of Affinity Matrices*" *(GlobalSIP Symposium on Mobile Imaging),* Austin, December 2013.
- H. Talebi, P. Milanfar, "*Improving Denoising Filters by Optimal Diffusion*", International Conference on Image Processing (*ICIP*), Orlando, September 2012.
- H. Talebi, P. Milanfar, "*Patch-wise Ideal Stopping Time for Anisotropic Diffusion*", SPIE Conference on Visual Information Processing and Communication (8305), Burlingame, CA, January 2012.
- H. Talebi, N. Karimi, S. Samavi, S. Shirani, "*Multi-layered Image Compression Using Structure Tensor for Texture Identification*", International Conference on Multimedia & Expo (ICME), Singapore, July 2010.
- H. Talebi, N. Karimi, S. Samavi, "*Low bit rate Image Compression By Two Layer Wavelet and Contourlet Transforms*", Iranian Conference on Electrical Engineering (ICEE), Iran, May 2010.
- N. Karimi, S. Samavi, S. Shirani, H. Talebi, S.M.A Zaynolabedin, "*Contourlet Based Image Compression Using Controlled Modification of Coefficients*", Proceedings of the IEEE, CCECE, pp. 991-994, Canada, May 2009.

Skills

Languages and Tools: MATLAB, C/C++

Platforms: Windows, Linux