Amin Kheradmand

Department of Electrical Engineering   Email: kheradmand88@gmail.com

University of California   Web: http://www.soe.ucsc.edu/~aminkh

1156 High Street

Santa Cruz, California 95064

Objective

- Open to opportunities that allow me to work with leading engineers and researchers in signal, image and video processing, computer vision, and machine learning.

Education

- *University of California, Santa Cruz*   Santa Cruz, CA
  Ph.D., Electrical Engineering   Sep. 2011 - Aug. 2016
  Thesis Title: Graph-based Image Restoration
  Advisor: Prof. Peyman Milanfar

- *Amirkabir University of Technology (Tehran Polytechnic)*   Tehran, Iran
  M.S., Electrical Engineering   Sep. 2008 - Feb. 2011

- *Isfahan University of Technology*   Isfahan, Iran
  B.S., Electrical Engineering   Sep. 2003 - Feb. 2008

Research Interests

- Statistical Signal, Image and Video Processing
- Computational Imaging and Inverse Problems (Image Deblurring, Super-resolution, Denoising)
- Computer Vision (Image Segmentation, Spectral Clustering)
- Machine Learning and Data Analysis

Work Experience

- **Dolby Laboratories, Sunnyvale, CA, USA**   Jun. 2015 - Dec. 2015

  Video Imaging Research Intern in Imaging Advanced Development group.
    - Worked on efficient HDR image processing methods for Dolby video codec pipeline.

- **HARMAN International Industries, Inc., Palo Alto, CA, USA**   Jun. 2014 - Sep. 2014

  Prototyping Software Engineering Intern in Future Experience group.
    - Worked on a User Experience project for prototyping visual search leveraging eye tracking, image segmentation, image annotation, and video label propagation.

Selected Research Projects

- **Research Assistant, UC Santa Cruz**   Sep. 2011 - Jul. 2016

- Developed a graph-based algorithm for image deblurring. Project webpage can be found at http://users.soe.ucsc.edu/~aminkh/KernelRestoration.html.
- Designed a graph-based algorithm for image denoising and smoothing with analysis and performance advantages over existing kernel similarity-based methods.
- Developed a data-adaptive sharpening algorithm capable of producing high quality outputs for noisy and blurry input images.

- **Research Assistant, Amirkabir University of Technology**   Sep. 2008 - Feb. 2011
    - Developed a new blind source separation algorithm for speech signals.

Professional Activities and Awards

- Graduate Division's 2014-15 Outstanding Teaching Assistant Award, Department of Electrical Engineering, University of California, Santa Cruz.
- Invited Panelist, Discussion Section on "Advances and New Directions in Deblurring and Image Restoration", Digital Photography and Mobile Imaging – SPIE Conference, San Francisco, 2015.
- Invited Speaker, IEEE Signal Processing Society Forum on "Ph.D. Elevator Pitch to Professionals", Sunnyvale, CA, 2015.
- Reviewer of IEEE Journals (TIP, TCI, SPL), SIAM Journal on Imaging Sciences, and IEEE Conferences (CVPR, ICCV, ICIP).

Selected Publications

- **Journal Papers**

    - A. Kheradmand, and P. Milanfar, "Non-linear Structure-aware Image Sharpening with Difference of Smoothing Operators", *Frontiers in ICT, Computer Image Analysis, vol. 2, no. 22, 2015.*
    - A. Kheradmand, and P. Milanfar, "A General Framework for Regularized, Similarity-based Image Restoration", *IEEE Transactions on Image Processing, vol. 23, no. 12, pp. 5136-5151, Dec. 2014.*

- **Patents**

    - A. Kheradmand, and G. Su, "Block-based Content-adaptive Reshaping for High Dynamic Range Images"*, United States Patent Application,* No. 62/290,399, filed February, 2016, Patent Pending.
    - G. Su, and A. Kheradmand, "Efficient Image Processing on Content-adaptive PQ Signal Domain", *United States Patent Application,* No. 62/255,703, filed November, 2015, Patent Pending.

- **Conference Publications**

    - A. Kheradmand and P. Milanfar, "Motion Deblurring with Graph Laplacian Regularization", *Digital Photography and Mobile Imaging XI conference, IS&T/SPIE Electronic Imaging 2015, San Francisco, CA.*
    - A. Kheradmand, and P. Milanfar, "A General Framework for Kernel Similarity-based Image Denoising," *IEEE Global Conference on Signal and Information Processing (GlobalSIP), Dec. 2013, Austin, TX.*

- A. Kheradmand, H. Sheikhzadeh, K. Raahemifar, and E. Ghanavati, "Blind Source Separation in Non-minimumphase Systems Based on Filter Decomposition", *IEEE International Symposium on Signal Processing and Information Technology (ISSPIT 2010).*
- A. Kheradmand, H. Sheikhzadeh, K. Raahemifar, and E. Ghanavati, "Examination of Convolutive Blind Source Separation Algorithms Based on Information Theoretic Criterion and Second-order Statistics for Cell-phone Application", *IEEE Canadian Conference on Electrical and Computer Engineering, 2011.*
- E. Ghanavati, H. Sheikhzadeh, K. Raahemifar and A. Kheradmand, *"Blind Source Separation Based on GDFT Filterbanks and Pre-determined Subband Whitening", EUSIPCO, 2011.*

Skills

- Languages and Tools: C/C++, MATLAB, OpenCV.
- Platforms: Linux/Unix, Mac, Windows.

Selected Coursework

- Statistical Signal Processing, Image Processing and Reconstruction, Machine Learning, Computer Vision, Advanced Digital Signal Processing, Random Processes, Biomedical Signal Processing.