Igor Fedorov 224-717-0333 ifedorov@eng.ucsd.edu http://ifed-ucsd.github.io/

Education

University of California, San Diego San Diego, CA
- *Ph.D in Electrical Engineering; GPA:4.0* *Aug 2014 - May 2018*
  Advisors: Bhaskar D. Rao and Truong Q. Nguyen

University of Illinois at Urbana-Champaign Urbana-Champaign, IL
- *M.S. in Electrical Engineering; GPA:3.78* *May 2014*
  Advisor: Pierre Moulin

University of Illinois at Urbana-Champaign Urbana-Champaign, IL
- *B.S. in Electrical Engineering; GPA:3.90* *May 2012*
  James Scholar, Highest Honors

Research

- My research focuses on Bayesian techniques for sparse signal recovery and dictionary learning
- I am broadly interested in statistical signal processing, machine learning, and computer vision

Publications (by topic)

Multimodal Dictionary Learning

- **I. Fedorov**, B.D. Rao, T.Q. Nguyen, "Multimodal Sparse Bayesian Dictionary Learning Applied to Multimodal Data Classification," *IEEE Conference on Acoustic, Speech, and Signal Processing*, 2017.

Sparsifying Deep Neural Networks

- **I. Fedorov**, B.D. Rao, "Sparsifying Deep Neural Networks"," IEEE International Conference on Acoustics, Speech and Signal Processing (under review), 2018.

Non-negative Matrix Factorization

- **I. Fedorov**, A. Nalci, R. Giri, B.D. Rao, T.Q. Nguyen, H. Garudadri, "A Unified Framework for Sparse Non-Negative Least Squares using Multiplicative Updates and the Non-Negative Matrix Factorization Problem," *Signal Processing*, Volume 146, May 2018, Pages 79-91, ISSN 0167-1648.
- A. Nalci, **I. Fedorov**, M. Al-Shoukairi, T. T. Liu, B.D. Rao. "Rectified Gaussian Scale Mixtures and the Sparse Non-Negative Least Squares Problem," *IEEE Transactions on Signal Processing (under review).*

Robust Sparse Signal Recovery

- **I. Fedorov**, R. Giri, B.D. Rao, T.Q. Nguyen, "Relevance Vector Machine: A Novel Person Re-Identification Framework," arXiv preprint arXiv:1703.10645, 2017.
- **I. Fedorov**, R. Giri, B.D. Rao, T.Q. Nguyen, "Robust Bayesian Method for Simultaneous Block Sparse Signal Recovery with Applications to Face Recognition." *IEEE International Conference on Image Processing*, 2016.

Single Photon Emission Computed Tomography

- **I. Fedorov**, S. Obrzut, B. Song, B.D. Rao, "SPECT Image Reconstruction under Imaging Time Constraints," Asilomar Conference on Signals, Systems and Computers, 2017 (to appear).
- **I. Fedorov**, B. Song, B.D. Rao, I. Levitan, S. Obrzut, "Total Variation Regularization in I-123 Ioflupane SPECT Reconstruction," Journal of Nuclear Medicine, 2017.

Miscellaneous

- **I. Fedorov**, R. Giri, C. Lee, A. Nalci, N. Radmanesh, S. Gadiyaram, B.D. Rao, T.Q. Nguyen, H. Garudadri. "Hearing Protection and Communication in the Presence of Extreme Industrial Noise," Technical Report, 2015.
- **I. Fedorov**, "Kinect depth video compression for action recognition," Master's thesis, 2014
- A. Khosrowpour, **I. Fedorov**, A. Holynski, J.C. Niebles, and M. Golparvar-Fard, "Automated Worker Activity Analysis in Indoor Environments for Direct-Work Rate Improvement from long sequences of RGB-D Images," *2014 Construction Research Congress*, May 2014.
- P.S. Shenoy, **I. Fedorov**, T. Neyens, P.T. Krein, "Power delivery for series connected voltage domains in digital circuits," *IEEE International Conference on Energy Aware Computing (ICEAC)*, 2011.

Experience

- **Samsung Research** — San Diego, CA
  Intern — *June 2017 – Sept 2017*
  - Deep learning research group
- **Qualcomm** — San Diego, CA
  Intern — *May 2015 – Aug 2015*
  - Developed continuous multi-modal authentication system for verifying mobile user's identity
- **Qualcomm** — San Diego, CA
  Intern — *May 2013 – Sept 2014*
  - Developed real-time, fixed point C implementation of Fast Stereo Independent Vector Analysis
- **Qualcomm** — San Diego, CA
  Intern — *Jun 2012 – Aug 2012*
  - Developed novel voice activity detector using non-negative matrix factorization
- **Cisco** — San Jose, CA
  Intern — *Jun 2011 – Aug 2011*
  - Implemented testing framework for NX-OS
- **ComEd** — Libertyville, IL
  Intern — *Jun 2010 – Aug 2010*
  - Worked with Transmission and Substation Department in the Testing Group

Skills

Matlab, Python, C/C++, LaTex, Fluent in Russian

Teaching

WES 267: Intro to Digital Signal Processing, UCSD, Sept 2016-Nov 2016
ECE 161B: Digital Signal Processing, UCSD, Jan 2016-Mar 2016
ECE 445: Senior Design, UIUC, Aug 2012-May 2014

Honors and Activites

ARCS Fellowship, 2015-2017
ECE Departmental Fellowship, University of California, San Diego, 2014
Jules D. Falzer Scholarship for outstanding scholastic record, University of Illinois, 2012
Member of Phi Eta Sigma: National Honor Society, University of Illinois, 2009-2012