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*   *July 2018*
  Advisor: Bhaskar D. Rao, co-advisor: 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 machine learning, statistical signal processing, and computer vision

Publications (by topic)

Multimodal Dictionary Learning

- **I. Fedorov**, B.D. Rao, "Multimodal Sparse Bayesian Dictionary Learning," *arXiv preprint*, 2018. (Under review at Journal of Machine Learning Research.)

- **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," arXiv preprint, 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*, 2018 (to appear).

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.

- **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.

Action Recognition

- **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.

Miscellaneous

- 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
ECE 161B: Digital Signal Processing, UCSD
ECE 445: Senior Design, UIUC

Honors and Activites

ARCS Fellowship, 2015-2018
ECE Departmental Fellowship, UCSD, 2014
Jules D. Falzer Scholarship for outstanding scholastic record, UIUC, 2012