

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

Python, Tensorflow, Pytorch, Matlab, 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