Dr. Magnus O. Ulfarsson

CONTACT
INFORMATION

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Dept. of Electrical Engineering
University of Iceland
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EMPLOYMENT
HISTORY

University of Iceland Science Institute, Reykjavik, Iceland

Research assistant in a semiconductor laboratory. **May, 1999 - August, 1999**

Decode Genetics, Reykjavik, Iceland

Computer Programmer **May, 2001 - August, 2001**

University of Iceland, Signal Processing Laboratory, Reykjavik, Iceland

Research Assistant. **June 2002 - August 2003**

University of Michigan, Dept. of Electrical Engineering and Computer Science, Ann Arbor, Michigan, USA.

Research Assistant. **Jan 2004-Des 2006**

University of Michigan Hospital, Dept. Internal Medicine, Ann Arbor Michigan, USA.

Research Assistant. **Jan. 2007-Des. 2007**.

University of Iceland, Department of Electrical Engineering, Reykjavik, Iceland

Assistant Professor. **Jan 2008-2012**
Associate Professor. **Jul 2012-2014**
Professor. **Jul 2014-present**
Department Head. **Jul 2018-2020**

Decode Genetics, Reykjavik, Iceland. Research Affiliation. **March 2013-present**

RESEARCH
INTERESTS

Statistical Signal Processing; Medical Image Processing (functional magnetic resonance imaging (fMRI)), Remote Sensing, Image Processing, Machine Learning, Deep Learning, Imaging Genetics.

EDUCATION

University of Michigan (2003-2007), Ann Arbor, Michigan USA

Ph.D. Electrical Engineering: Systems, December 2007

- Dissertation Title: "Model Based Principal Component Analysis with Application to Functional Magnetic Resonance Imaging"
- Advisors: Prof. V. Solo, Prof. A. Hero

University of Iceland (1997-2002), Reykjavik, Iceland

M.S., and B.S. Electrical Engineering, May, 2002

HONORS AND
AWARDS

Helga Jonsdottir and Sigurlidi Kristjansson Memorial Fund for Icelandic Engineering Students, 2005

Travel Award, Intelligent Extraction of Information from Graphs and High Dimensional Data, Graduate Summer School, IPAM, UCLA, CA, 2005

Fulbright Fellowship, 2003

| ACADEMIC | **University of Michigan**, Ann Arbor, Michigan USA |
| EXPERIENCE | *Graduate Student Research Assistant (GSRA)* **2004 - 2008** |

University of Iceland, Reykjavik, Iceland *Researcher* **Jun 2002 - Jun, 2003**
Worked as a researcher under the supervision of Dr. Johannes R. Sveinsson at the University of Iceland Engineering Institute. My research focus was on remote sensing applications.

Taught undergraduate and graduate level courses in the Department of Electrical Engineering at the University of Iceland.
- Raf 401G Circuit Analysis and Synthesis, Winter 2000 (Grader)
- Raf 301G Signals and Systems, Fall 2000,2001,2002, (Grader)
- Raf 404G Probabilistic Methods in Signal Processing, Winter, 2001,2002,2003 (Grader)
- 08.31.20 Computer Architecture, Fall 2002, (Primary Instructor)
- 08.31.17 Digital Techniques, Winter 2003, (Primary Instructor)
- Raf 404G Probabilistic Methods in Signal Processing, Winter 2008,2010,2011,2013,2015,2016,2017 (Primary Instructor)
- Raf 203G Soft Computing, Winter 2008, (Primary Instructor).
- Raf 501F Communication Systems, Fall 2008, (Primary Instructor).
- Raf 101G Random Variables and Random Processes, Fall 2008,2009,2010,2011,2012 (Primary Instructor).
- Raf201G Linear Circuit Analysis, Winter 2009,2010,2011,2012 (Primary Instructor)
- Raf201F Medical Imaging Systems, Winter 2009,2010,2012 (Primary Instructor)
- Raf032F Statistical Signal Processing, Fall 2009,2015 (Primary Instructor).
- Raf301G Signals and Systems, Fall 2011,2012,2013,2015,2016 (Primary Instructor).
- Raf620M Introduction to Pattern Recognition, Winter 2018 (Primary Instructor)

Students that I have supervised or co-supervised:
- Jakob Sigursson, Smooth noisy PCA using a first order roughness penalty, [MS], 2011
- Hilmar Thor Birgisson, Musical tone recognition system for interval tone training on mobile devices, [MS], 2012
- Frosti Palsson, Pansharpening and Classification of Pansharpened Images, [MS], 2013
- Behnood Rasti, Sparse Hyperspectral Image Modeling and Restoration, [PhD], 2014
- Jakob Sigurdsson, Hyperspectral Unmixing using Total Variation and Sparse Methods, [PhD], 2015.
- Frosti Palsson, Image Fusion in Remote Sensing and Quality Evaluation of Fused Images, [PhD], 2017.
- Benedikt Atli Jonsson, Brain Age Prediction using Magnetic Resonance Imaging and Deep Learning, [MS], 2018.

| RESEARCH SUPPORT | **Rannis (The Icelandic Research Fund)**, Multivariate Signal Processing. |

Primary Investigator. **Jan. 2013-Des. 2015**.

University of Iceland, Research Fund, various projects

Primary Investigator. **Jan. 2008-**.

University of Iceland, Doctoral Fund, **Jan. 2016-Des. 2018**.

Rannis (The Icelandic Research Fund), Deep Learning for Big Data in Remote Sensing.

Co-Primary Investigator. **Jan. 2017-Des. 2019**.

Professional
Affiliations
2003-, Certified Engineer (Association of Chartered Engineers in Iceland).
2007-2008, Student Member, IEEE.
2008-present, Member, IEEE.

Editoral and
Review work
Associate Editor for IEEE Transactions on Geoscience and Remote Sensing
Reviewer for IEEE Transactions on Geoscience and Remote Sensing.
Reviewer for IEEE Transactions on Medical Imaging.
Reviewer for IEEE Transaction on Signal Processing.
Reviewer for IEEE Signal Processing Letter.
Reviewer for IEEE Geoscience and Remote Sensing Letter.
Reviewer for Neuroimage.

Committees and
Boards
University of Iceland, Research Fund, Evaluation Committee, 2010-2011, 2012-2013.
Unversity of Iceland, School of Natural Science and Engineering, Science Committee, 2013-2014, 2017-2018, 2018-2020 (Chair).
University of Iceland, Science Committee, 2018-2020.
Organizer, IEEE Iceland Section, 2008-present.
Organizer, Signal Processing Chapter, IEEE Iceland, 2008-2014.
University of Iceland, Dept. Electrical Eng., Hiring Committee for various academic positions, 2010,2013,2014.
Gerosion, Board Member, 2014-present.

Organization of
Conferences and
Workshops
Program Committee, Machine Learning for Signal Processing (MLSP), 2008,2010.
Program Committee, European Association for Signal Processing (EUSIPCO), 2017,2018.

Refereed
Journal Articles
M.O. Ulfarsson, J.R. Sveinsson, and J.A. Benediktsson. Denoising in the Curvelet Domain. Association of Chartered Engineers in Iceland,Yearbook 2002/2003.

M.O. Ulfarsson, J.R. Sveinsson, and J.A. Benediktsson. Data Fusion and Feature Extraction in the Wavelet Domain. Int. J. Remote Sensing, 24(20): 3933-3945,2003.

M. Ulfarsson and V. Solo. Dimension Estimation in noisy PCA with SURE and Random matrix Theory, IEEE Trans. Signal Proc. 56(12): 5804-5816, 2008.

M. Ulfarsson and V. Solo. Sparse PCA using Geodesic Steepest Descent, IEEE Trans. Signal Proc. 56(12): 5823-5832, 2008.

K. Yoshida, M. Ulfarsson, H. Tada, A. Chugh, E. Good, M. Kuhne, T. Crawford, J. Sarrazin, N. Chalfoun, D. Wells, W. Boonyapisit, S. Veerareddy, S. Billakanty, S. Wai, S. Wong, A. Kfahagi, K. Jongnarangsin, F. Pelosi, F. Bogun, F. Morady, H. Oral. Complex Electrograms within the Coronary Sinus: Time- and Frequency- Domain Characteristics, Effects of Antral Pulmonary Vein Isolation and Relationship to Clinical Outcome in Patient with Paroxysmal and Persistent Atrial Fibrillation, J. Cardiovascular Electrophysiology, 19(10): 1017-1023, 2008.

K. Yoshida, A. Chugh, M. Ulfarsson, E. Good, M. Kuhne, T. Crawford, J. F. Sarrazin, N. Chalfoun, D. Wells, W. Boonyapisit, S. Veerareddy, S. Billakanty, W. S. Wong, K. Jongnarangsin, F. Pelosi, F. Bogun, F. Morady, H. Oral. Relationship Between the Spectral Characteristics of Atrial Fibrillation and Atrial Tachycardias That Occur After Catheter Ablation of Atrial Fibrillation, Heart Rhythm, Vol 6, No. 1, Jan. 2009.

M. Yokokawa, A. Chugh, M. Ulfarsson, H. Takaki, L. Han, K. Yoshida, M. Sugimachi, F. Morady, H. Oral, Effect of linear ablation on spectral components of atrial fibrillation, Heart Rhythm, 7(12):1732-1737,2010.

K. Yoshida, M. Ulfarsson, H. Oral, T. Crawford, E. Good, K. Jongnarangsin, F. Bogun, F. Pelosi, J. Jalife, F. Morady, A. Chugh, Left Atrial Pressure and Dominant Frequency of Atrial Fibrillation in Humans, Heart Rhythm, Feb;8(2):181-7, 2011.

L. Hernandez and M. Ulfarsson. Neuronal event detection in FMRI time series using iterative deconvolution techniques, Magnetic Resonance Imaging, 29(3):353-364,2011

M. O. Ulfarsson, V. Solo, Vector l0 sparse variable PCA, IEEE Transactions on Signal Processing, 59(4):1949-1958,2011.

Chang, Sheng; Ulfarsson, Magnus; Chugh, Aman; Yoshida, Kentaro; Jongnarangsin, Krit; Crawford, Thomas; Good, Eric; Pelosi, Jr., Frank; Bogun, Frank; Morady, Fred; Oral, Hakan, Time- and Frequency-Domain Characteristics of Atrial Electrograms During Sinus Rhythm and Atrial Fibrillation, Journal of Cardiovascular Electrophysiology, Aug;22(8):851-857,2011.

Luis Hernandez-Garcia, Vivek Bhatia, Krishan Prem-Kumar and Magnus Ulfarsson, Magnetic resonance imaging of time-varying magnetic fields from therapeutic devices, NMR in biomedicine, Jun;26(6):718-724,2013.

M.O. Ulfarsson, V. Solo, Tuning Parameter Selection for Underdetermined Reduced-Rank Regression, IEEE Signal Processing Letters, volume 20, issue 9, pages 881-884, 2013.

F. Palsson, J.R. Sveinsson, and M.O. Ulfarsson, A New Pansharpening Algorithm Based on Total Variation, Geoscience and Remote Sensing Letters, volume 11, issue 1, pages 318-322, 2014.

P. Ghamisi, J.A. Benediktsson, and M.O.Ulfarsson, Spectral-Spatial Classification of Hyperspectral Images Based on Hidden Markov Random Fields, IEEE Transactions on Geoscience and Remote Sensing, volume 52, issue 5, pages 2565-2574, 2014.

B. Rasti, J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, Hyperspectral Image Denoising Using First Order Spectral Roughness Penalty in Wavelet Domain, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Volume 7, Issue 6 Pages 2458 - 2467, 2014.

J. Sigurdsson, M.O. Ulfarsson, and J.R. Sveinsson, Hyperspectral unmixing using l_q penalty, IEEE Transactions on Geoscience and Remote Sensing, volume 52, issue 11, pages 6793-6806, 2014.

B. Rasti, J.R. Sveinsson, and M.O. Ulfarsson, Wavelet Based Sparse Reduced Rank Regression for Hyperspectral Image Restoration, IEEE Transactions on Geoscience and Remote Sensing, volume 52, issue 10, pages 6688 - 6698, 2014.

M.O. Ulfarsson, V.Solo, Selecting the Number of Principal Components with SURE, IEEE Signal Processing Letters, Volume 22, Issue 2, 239-243,2015.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, Model Based Fusion of Multi- and Hyperspectral Images using PCA and Wavelets, IEEE Transactions on Geoscience and Remote Sensing, volume 53, issue 5, pages 2652-2663, 2015.

B. Rasti, M.O. Ulfarsson, and J.R. Sveinsson, Hyperspectral Subspace Identification Using SURE, IEEE Geoscience and Remote Sensing Letters, volume 12, issue 12, pages2481 - 2485, year 2015.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, Quantitative Quality Evaluation of Pansharpened Imagery: Consistency Versus Synthesis, IEEE Transactions on Geoscience and Remote Sensing, volume 54, issue 3, pages 1247 - 1259, 2016.

M.O. Ulfarsson, F. Palsson, J. Sigurdsson, J.R. Sveinsson, Classification of Big Data With Application to Imaging Genetics, Proceedings of the IEEE, volume 104, number 11, pages 2137 - 2154, 2016.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, MTF-Based Deblurring Using a Wiener Filter for CS and MRA Pansharpening Methods, IEEE Journal of selected topics in Geoscience and Remote Sensing, volume 9, issue 6, pages 2255 - 2269, 2016.

Jakob Sigurdsson; Magnus Orn Ulfarsson; Johannes R. Sveinsson, Blind Hyperspectral Unmixing Using Total Variation and l_q Sparse Regularization, IEEE Transactions on Geoscience and Remote Sensing, volume 54, number 11, pages 6371 - 6384, 2016.

Behnood Rasti; Magnus Orn Ulfarsson; Johannes R. Sveinsson, Hyperspectral Feature Extraction Using Total Variation Component Analysis, IEEE Transactions on Geoscience and Remote Sensing, volume 54, number 12, pages 6976 - 6985, 2016.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, Multispectral and Hyperspectral Image Fusion Using a 3-D-Convolutional Neural Network, IEEE Geoscience and Remote Sensing Letters, 14(5) Pages: 639-643, 2017.

Magnus O. Ulfarsson, G. Bragi Walters, Omar Gustafsson, Stacy Steinberg, Ana Silva, Orla M. Doyle, Michael Brammer, Daniel F. Gudbjartsson, Sunna Arnarsdottir, Gudrun A. Jonsdottir, Rosa S. Gisladottir, Gyda Bjornsdottir, Hannes Helgason, Lotta M. Ellingsen, Jonas G. Halldorsson, Evald Saemundsen, Berglind Stefansdottir, Lina Jonsson, Valgerdur K. Eiriksdottir, Gudrun R. Eiriksdottir, Gudbjorg H. Johannesdottir, Unnur Unnsteinsdottir, Birna Jonsdottir, Brynja B. Magnusdottir, Patrick Sulem, Unnur Thorsteinsdottir, Engilbert Sigurdsson, Daniel Brandeis, Andreas Meyer-Lindenberg, Hreinn Stefansson, Kari Stefansson, 15q11.2 CNV affects cognitive, structural and functional correlates of dyslexia and dyscalculia, Translational Psychatry, 7, Article Number: e1109, 2017.

J. Sigurdsson and M.O. Ulfarsson and J.R. Sveinsson and J.M. Bioucas-Dias, Sparse Distributed Multitemporal Hyperspectral Unmixing, IEEE Transactions on Geoscience and Remote Sensing, 55(11), pages: 6069 - 6084, 2017.

Behnood Rasti; Magnus Orn Ulfarsson; Pedram Ghamisi, Automatic Hyperspectral Image Restoration Using Sparse and Low-Rank Modeling, IEEE Geoscience and Remote Sensing Letters, 14(12), 2335-2339, DEC 2017.

M. Aufaristama; A. Hoskuldsson; I. Jonsdottir; M.O. Ulfarsson and T. Thordarson, New Insights for Detecting and Deriving Thermal Properties of Lava Flow Using Infrared Satellite during 2014-2015 Effusive Eruption at Holuhraun, Remote Sensing, 10(1), 2018.

B. Palsson; J. Sigurdsson; J.R. Sveinsson, M.O. Ulfarsson, Hyperspectral Unmixing Using a Neural Network Autoencoder, IEEE ACCESS volume 6, pages 25646-25656, 2018.

F. Palsson; J.R. Sveinsson; M.O. Ulfarsson, Sentinel-2 Image Fusion Using a Deep Residual Network, Remote Sensing 10(8):1290, 2018.

J. Sigurdsson; M.O. Ulfarsson; J.R. Sveinsson, Blind Sparse Nonlinear Hyperspectral Unmixing Using an lq Penalty ,IEEE Geoscience and Remote Sensing Letters PP(99): 1-5, Accepted for

publication

G.B. Walters, O. Gustafsson, G. Sveinbjornsson, V. K. Eiriksdottir, A. B. Agustsdottir, G. A. Jonsdottir, S. Steinberg, A.F. Gunnarsson, M.I. Magnusson, U. Unnsteinsdottir, A.L. Lee, A. Jonasdottir, A. Sigurdsson, A. Jonasdottir, A. Skuladottir, L. Jonsson, M. S. Nawaz, P. Sulem, M. Frigge, A. Ingason, A. Love, G. L. Norddhal, M. Zervas, D. F. Gudbjartsson, M.O. Ulfarsson, E. Saemundsen, H. Stefansson, K. Stefansson, MAP1B mutations cause intellectual disability and extensive white matter deficit, Nature Communication, 9:3456, 2018.

REFEREED CONFERENCE ARTICLES

M.O. Ulfarsson, J.A. Benediktsson and J.R. Sveinsson, "Data Fusion and Feature Extraction in the Wavelet Domain," in Proc. IEEE International Workshop on Geo-Spatial Knowledge Processing for Natural Resource Management, Varese, Italy, Jun. 2001.

J.R. Sveinsson, M.O. Ulfarsson and J.A. Benediktsson, "Cluster-Based Feature Extraction and Data Fusion in the Wavelet Domain," in Proc. IEEE International Geoscience and Remote Sensing (IGARSS 2001), Sydney, Australia, Jul. 2001.

M.O. Ulfarsson, J.A. Benediktsson and J.R. Sveinsson, "Wavelet feature extraction and genetic feature selection for multisource data," in Proc. International Workshop on Geo-Spatial Knowledge Processing for Natural Resource Management, vol. IV, pp. 3329-3331, Varese, Italy, Jule 2002.

M.O. Ulfarsson, J.R. Sveinsson, and J.A. Benediktsson,"Speckle Reduction of SAR images in the Curvelet Domain," In Proc. IEEE International Geoscience and Remote Sensing (IGARSS 2002), vol. I, pp. 315-317, Toronto, Canada, June 2002.

M.O. Ulfarsson, J.R. Sveinsson, and J.A. Benediktsson, "Wavelet footprints for speckle reduction of SAR images," In Proc. IEEE International Geoscience and Remote Sensing (IGARSS 2003), vol. 6, pp. 4092 - 4094, Toulouse, France, July 2003.

M.O. Ulfarsson, and V. Solo, "Smooth Principal Component Analysis with Application to Functional Magnetic Resonance Imaging" In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2006), vol. 2., pp. 993-996, Toulouse, France, May 2006.

M.O. Ulfarsson, and V. Solo, "Spatially local and temporally smooth PCA for fMRI", In Proc. IEEE International Conference on Image Processing (ICIP 2006), Atlanta, USA, October 2006.

M.O. Ulfarsson, and V. Solo, "Sparse variable PCA with application to fMRI", In Proc. IEEE International Symposium on Biomedical Imaging (ISBI 2007), Washington D.C., USA, April 2007.

M.O. Ulfarsson, and V. Solo, "Rank selection in noisy PCA with SURE and Random Matrix Theory" In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2008), Las Vegas, Nevada, USA, March 2008.

M.O. Ulfarsson, and V. Solo, "Sparse variable PCA using a steepest descent on a Grassman manifold", In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2009), Taipei, Taiwan, March 2009.

J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, "Speckle Reduction of SAR images using SURE-based adaptive sigmoid thresholding in the wavelet domain", In Proc IEEE. International Conference on Geoscience and Remote Sensing (IGARSS 2009), Cape Town, South Africa, 2009.

M.O. Ulfarsson, and V. Solo, "Sparse variable noisy PCA using l_0 penalty", In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2010), Dallas, USA, 2010.

M.O. Ulfarsson, and V. Solo, "A semiparametric PCA approach to fMRI data analysis", In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2010), Dallas, USA, 2010.

V. Solo, and M.O. Ulfarsson, "Threshold selection for group sparsity", In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2010), Dallas, USA, 2010.

A. Villa, J. Chanussot, J. A. Benediktsson, M. Ulfarsson, C. Jutten, "Super-resolution: an effective method to improve spatial resolution of hyperspectral images", In Proc IEEE International Conference on Geoscience and Remote Sensing (IGARSS 2010), Hawaii, USA, 2010.

Sigurdsson, J. and M.O. Ulfarsson, "Smooth noisy PCA using 1st order roughness penalty", In Proc IEEE Machine Learning for Signal Processing (MLSP 2010), Finland, 2010.

M.O. Ulfarsson and V. Solo, Sparse variable reduced rank regression via Stiefel Optimization, In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2011), Prague, Czech Republic, 2011.

M.O. Ulfarsson and V. Solo, Sparse loading noisy PCA using an l0 penalty, In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012), Kyoto, Japan, 2012.

J. Sigurdsson, M.O. Ulfarsson, J.R. Sveinsson, J.A. Benediktsson, "A smooth Hyperspectral unmixing method based on cyclic descent', In Proc. IEEE. International Conference on Geoscience and Remote Sensing (IGARSS 2012)

B. Rasti, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, "Hyperspectral image denoising using 3D wavelets", In Proc. IEEE. International Conference on Geoscience and Remote Sensing (IGARSS 2012)

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, "A new pansharpening method using an explicit image formation model regularized via total variation ", In Proc. IEEE. International Conference on Geoscience and Remote Sensing (IGARSS 2012)

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, J.A. Benediktsson, "SAR image denoising using total variation variation based regularization with SURE based optimization of the regularization parameter", In Proc. IEEE. International Conference on Geoscience and Remote Sensing (IGARSS 2012)

M.O. Ulfarsson and V. Solo, 'Tuning Parameter Selection for Nonnegative Matrix Factorization, In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2013), Vancouver, Canada, 2013.

B. Rasti, J.R. Sveinsson, M.O. Ulfarsson and J. Sigurdsson, First Order Roughness Penalty for Hyperspectral Image Denoising, IEEE Workshop on Hyperspectral Image and Signal Processing Gainsville, Florida, USA, 2013.

B. Rasti, J.R. Sveinsson, M.O. Ulfarsson and J. Sigurdsson, Wavelet Based Sparse Principal Component Analysis for Hyperspectral Denoising, IEEE Workshop on Hyperspectral Image and Signal Processing Gainsville, Florida, USA, 2013.

J. Sigurdsson, M.O. Ulfarsson, and J.R. Sveinsson, Smooth and Sparse Hyperspectral Unmixing using an l0 penalty, IEEE Workshop on Hyperspectral Image and Signal Processing, Gainsville, Florida, USA, 2013.

J. Sigurdsson, M.O. Ulfarsson, J.R. Sveinsson, and J.A. Benediktsson, Sparse Representation of Hyperspectral Data using CUR Matrix Decomposition, IEEE International Conference on Geoscience and Remote Sensing (IGARSS 2013), Melbourne, Australia, 2013.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, Pansharpening via Sparsity Optimization using Overcomplete Wavelet Transforms, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2013), Melbourne, Australia, 2013.

B. Rasti, J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, Hyperspectral Image Denoising Using a New Linear Model and Sparse Regularization, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2013), Melbourne, Australia, 2013.

J. Sigurdsson, M. O. Ulfarsson, J. R. Sveinsson, and J. A. Benediktsson, Smooth Spectral Unmixing using Total Variation Regularization and a First Order Roughness Penalty, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2013), Melbourne, Australia, 2013.

P. Ghamisi, J.A. Benediktsson, and M. O. Ulfarsson, The Spectral Spatial Classification of Hyperspectral Images Based On Hidden Markov Random Field and its Expectation-Maximization, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2013), Melbourne, Australia, 2013.

B. Rasti, J. R. Sveinsson, M. O. Ulfarsson and J. A. Benediktsson, Hyperspectral image restoration using wavelets, SPIE Remote Sensing, Dresden, Germany, 2013.

B. Rasti, J. R. Sveinsson, M. O. Ulfarsson and J. A. Benediktsson, Wavelet based hyperspectral image restoration using spatial and spectral penalties, SPIE Remote Sensing, Dresden, Germany, 2013.

M.O. Ulfarsson and V. Solo, Sparse Component Analysis via Dyadic Cyclic Descent, In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014), Florence, Italy, 2014.

F. Palsson, M.O. Ulfarsson and J.R. Sveinsson, Sparse Gaussian Noisy Independent Component Analysis, In Proc IEEE. International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014), Florence, Italy, 2014.

F. Palsson, M.O. Ulfarsson, and J.R. Sveinsson, Hyperspectral Image Denoising Using a Sparse Low Rank Model and Dual-Tree Complex Wavelet Transform, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2014), Quebec City, Canada, 2014.

F. Palsson, J.R. Sveinsson, and M.O. Ulfarsson, Model based PCA/Wavelet Fusion of Multispectral and Hyperspectral Images, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2014), Quebec City, Canada, 2014.

B. Rasti, M.O. Ulfarsson and J.R. Sveinsson, SURE Based Model Selection for Hyperspectral Imaging, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2014), Quebec City, Canada, 2014.

B. Rasti, J.R. Sveinsson and M.O. Ulfarsson, Total Variation Based Hyperspectral Feature Extraction, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2014), Quebec City, Canada, 2014.

J. Sigurdsson, M.O. Ulfarsson and J.R. Sveinsson, Semi-supervised hyperspectral unmixing, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2014), Quebec City, Canada,

2014.

J. Sigurdsson, M.O. Ulfarsson and J.R. Sveinsson, Endmember Constrained Semi-Supervised Hyperspectral Unmixing, IEEE Workshop on Hyperspectral Image and Signal Processing, Lausanne, Switzerland, 2014.

M.O. Ulfarsson, V. Solo, G. Marjanovic, Sparse and Low Rank Decomposition using l0 penalty, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP15), Brisbane, 2015.

G. Marjanovic, M.O. Ulfarsson, A.Hero, MIST: l0 Sparse Linear Regression with Momentum, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP15), Brisbane, 2015.

J. Sigurdsson, M.O. Ulfarsson and J.R. Sveinsson, Total Variation and lq Based Hyperspectral Unmixing for Feature Extraction and Classification, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2015), Milano, 2015.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, MTF-Deblurring Preprocessing for CS and MRA Pansharpening Methods, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2015), Milano, 2015.

F. Palsson, J.R. Sveinsson, M.O. Ulfarsson, and J.A. Benediktsson, Model Based Pansharpening Method Based on TV and MTF Deblurring, IEEE International Conference on Geoscience and Remote Sensing, (IGARSS 2015), Milano, 2015.

M.O. Ulfarsson, V. Solo, J. Sigurdsson, J.R. Sveinsson, Distributed Dyadic Cyclic Descent for Non-Negative Matrix Factorization, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP16), Shanghai, China, 2016.

G. Marjanovic, M.O. Ulfarsson, V.Solo, Large-Scale l0 Sparse Inverse Covariance Estimation, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP16), Shanghai, China, 2016.

J. Sigurdsson, M.O.Ulfarsson, J.R. Sveinsson, J.H. Bioucas-Dias, Sparse Distributed Hyperspectral Unmixing, IEEE International Conference on Geoscience and Remote Sensing, Peking, 2016

J. Sigurdsson, M.O.Ulfarsson, J.R. Sveinsson, Fast Multitemporal Hyperspectral Unmixing, IEEE International Conference on Geoscience and Remote Sensing, Fort Worth, 2017

J. Sigurdsson, M.O.Ulfarsson, J.R. Sveinsson, Sparse and Low Rank Hyperspectral Unmixing, IEEE International Conference on Geoscience and Remote Sensing, Fort Worth, 2017

F. Palsson, J. Sigurdsson, J.R. Sveinsson, M.O. Ulfarsson, Neural Network Hyperspectral Unmixing with Spectral Information Divergence Objective, IEEE International Conference on Geoscience and Remote Sensing, Fort Worth, 2017

J. Sigurdsson, M.O. Ulfarsson, J.R. Sveinsson, Blind Nonlinear Hyperspectral Unmixing Using an lq Regularizer, IEEE International Conference on Geoscience and Remote Sensing, Valencia, 2018.

M. Ulfarsson, M. Dalla Mura, A low-rank method for Sentinel-2 sharpening using cyclic descent, IEEE International Conference on Geoscience and Remote Sensing, Valencia, 2018.

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