SPARS 2019
Toulouse, July 1-4 2019

Posters sessions

Monday, July 1st 2019

Lunch + Poster session 1
Room: **C101 - C103**

Nonsparsity influence on reconstruction time-frequency signals with sparsity constraint
Isidora STANKOVIC
Grenoble INP, University of Grenoble Alpes, France

On instabilities of deep learning in image reconstruction
Vegard ANTUN[1], Francesco RENNA[2], Clarice POON[3], Ben ADCOCK[4], Anders HANSEN[5,1]
1: University of Oslo, Norway; 2: Faculdade de Ciências da Universidade do Porto, Portugal; 3: University of Bath, UK; 4: Simon Fraser University, Canada; 5: University of Cambridge, UK

Density evolution of Orthogonal Matching Pursuit
Claude PETIT[1], Aline ROUMY[2], Giulio COLUCCIA[3], Enrico MAGLI[3]
1: Insee, France; 2: Inria, France; 3: Politecnico di Torino, Italy

Negative Binomial Matrix Factorization for Recommender Systems
Olivier GOUVERT, Thomas OBERLIN, Cédric FÉVOTTE
IRIT, Université de Toulouse, CNRS

Closed-form Marginal Likelihood in Gamma-Poisson Matrix Factorization
Louis FILSTROFF[1], Alberto LUMBRERAS[2], Cédric FÉVOTTE[1]
1: IRIT, Université de Toulouse, CNRS, France; 2: Criteo AI Lab

Bandlimited Signal Reconstruction from Nonuniform Samples
Santhosh KARNIK, Justin ROMBERG, Mark A. DAVENPORT
Georgia Institute of Technology, United States of America

A Faceted Prior for Scalable Wideband Computational Imaging
Abdullah ABDULAZIZ[1], Pierre-Antoine THOUVENIN[1], Ming JIANG[2], Yves WIAUX[1]
1: Heriot-Watt University, United Kingdom; 2: École Polytechnique Fédérale de Lausanne, Switzerland

A scalable estimator of space varying blurs - application in super-resolution
Valentin DEBARNOT[1], Thomas MANGEAT[2], Pierre WEISS[1]
1: ITAV, CNRS, France; 2: CBI, CNRS, France

Deep Brain Source Imaging: A LSTM-inspired Approach for EEG Source Localization based on Sparse Bayesian Learning
Ali HASHEMI[1,2,3], Hector Andrade LOARCA[1], Stefan HAUFE[3], Gitta KUTYNIOK[1,2], Klaus-Robert MÜLLER[2,4,5,6,7]
1: Institut für Mathematik, Technische Universität Berlin, Germany; 2: Electrical Engineering and Computer Science, Technische Universität Berlin, Germany; 3: Berlin Center for Advanced Neuroimaging (BCAN), Charite Universitätsmedizin Berlin, Germany; 4: Berlin Big Data Center, 10587 Berlin, Germany.; 5: Berliner Zentrum für Maschinelles Lernen, 10587 Berlin, Germany.; 6: Department of Brain and Cognitive Engineering, Korea University, Seoul 02841, South Korea,; 7: Max Planck Institute for Informatics, Stuhlsatzenhausweg, Saarbrucken, Germany.

Exploiting regularity in sparse Generalized Linear Models
Mathurin MASSIAS[1], Samuel VAITER[2], Alexandre GRAMFORT[1], Joseph SALMON[3]
1: INRIA, Université Paris-Saclay, Palaiseau, France; 2: CNRS & Institut de Mathématiques de Bourgogne, Dijon, France; 3: IMAG, Univ Montpellier, CNRS, Montpellier, France

FeTa: Fast and Efficient Pruning of Deep Neural Networks
Konstantinos PITAS[1], Mike DAVIES[2], Pierre VANDERGHEYSNT[1]
1: EPFl, Switzerland; 2: University of Edinburgh, UK

Iterative low-rank and rotating sparsity promotion for circumstellar disks imaging
Benoît PAIRET[1], Faustine CANTALLOUBE[2], Laurent JACQUES[1]
1: ISPGroup, ICTEAM, UCLouvain, Belgium; 2: Max Planck Institute for Astronomy, Germany

On the Local Minimizers of the CEL0 Relaxation

Emmanuel SOUBIES[1], Laure BLANC-FÉRAUD[2], Gilles AUBERT[3]
1: IRIT, University of Toulouse, CNRS, France; 2: University Côte d'Azur, CNRS, INRIA, i3S, France; 3: University Côte d'Azur, INS, LJAD, France

The Adaptive Dictionary Learning Toolbox

Cristian RUSU[1], Karin SCHNASS[2]
1: IIT, Italy; 2: University of Innsbruck, Austria

Noisy Matrix Completion: Understanding Statistical Guarantees for Convex Relaxation via Nonconvex Optimization

Cong MA[1], Yuling YAN[1], Yuejie CHI[2], Jianqing FAN[1], Yuxin CHEN[1]
1: Princeton University, United States of America; 2: Carnegie Mellon University, United States of America

An L0 solution to sparse approximation problems with continuous dictionaries

Mégane BOUDINEAU[1], Hervé CARFANTAN[1], Sébastien BOURGUIGNON[2]
1: IRAP, Université de Toulouse/CNRS/CNES, France; 2: LS2N, École Centrale de Nantes/CNRS, France

Distributed sparse BSS for large-scale datasets

Tobias Ignacio LIAUDAT, Jérôme BOBIN, Christophe KERVAZO
CEA, France

Learning to unmix from Poisson measurements with application to γ-spectroscopy

Jerome BOBIN[1], Jiaxin XU[2], Anne DE VISMES[2], Christophe BOBIN[3]
1: CEA-DRF/IRFU, France; 2: IRSN-LMRE; 3: CEA-DRT/LIST, France

Linear convergence and support recovery for non-convex multi-penalty regularisation

Zeljko KERETA[1], Johannes MALY[2], Valeriya NAUMOVA[1]
1: Simula Research Laboratory, Norway; 2: RWTH Aachen University

Magnetic Resonance and Ultrasound Image Fusion Using a PALM Algorithm

Oumaima EL MANSOURI[1], Adrian BASARB[1], Fabien VIDAL[1,2], Denis KAOUME[1], Jean-yves TOURNERET[1]
1: University of Toulouse, IRIT, CNRS, INP-ENSEEIHT, Université Paul Sabatier Toulouse 3, France; 2: CHU Toulouse, Obstetrics Gynecology Department, Paule de viguier Hospital Toulouse F-31059, France

Spatially-filtered temporal dictionary learning for calciumimaging analysis

Gal MISHNE[1], Nathan CERMAK[2], Jackie SHILLER[2], Adam CHARLES[3]
1: Yale University, United States of America; 2: Technion, Israel Institute of Technology, Israel; 3: Princeton University, United States of America

Tensor-Free Algorithms for Convex Liftings of Bilinear Inverse Problems with Applications to Masked Phase Retrieval

Robert BEINERT, Kristian BREDIES
University of Graz, Austria

A New Perspective on L1-Analysis Recovery

Martin GENZEL, Gitta KUTYNIOK, Maximilian MÄRZ
Technische Universität Berlin, Germany

Compressed Diffusion

Scott GIGANTE[1], Jay S STANLEY III[1], Ngan VU[1], David VAN DIJK[1], Kevin R MOON[2], Guy WOLF[3], Smita KRISHNASWAMY[1]
1: Yale University, United States of America; 2: Utah State University, United States of America; 3: Université de Montréal, Canada

Towards Theoretically-Founded Learning-Based Denoising

Wenda ZHOU[1], Shirin JALALI[2]
1: Columbia University, United States of America; 2: Nokia Bell Labs

Graph Based Trajectory Mining

Francesco GRASSI, Nauman SHAHID
United Technologies Research Center, Ireland

Learned Matching Pursuit: a Deep Neural Network for Sparse Approximation

Mehrdad YAGHOOBI
University of Edinburgh, United Kingdom

A Theoretical Study of Adversarial Examples

Ali SHAFAHI[1], Ronny HUANG[1], Christoph STUDER[2], Soheil FEIZI[1], Tom GOLDSTEIN[1]
1: University of Maryland; 2: Cornell University

Linear Simplex Support Vector Regression

Quentin KLOPFENSTEIN[1], Samuel VAITER[1,2]
1: Institut Mathématiques de Bourgogne, France; 2: CNRS, France

Tuesday, July 2nd 2019

Lunch + Poster session 2
Room: **C101 - C103**

Improving Graph Trend Filtering with Non-Convex Penalties

Rohan VARMA[1], Harlin LEE[1], Yuejie CHI[1], Jelena KOVAČEVIĆ[2]
1: Dept. of Electrical and Computer Engineering, Carnegie Mellon University, United States of America; 2: Tandon School of Engineering, New York University, United States of America

Robust Incorporation of Signal Predictions into the Sparse Bayesian Learning Framework

Matthew O'SHAUGHNESSY, Mark DAVENPORT, Christopher ROZELL
Georgia Institute of Technology, United States

Tensor and Coupled Decompositions in Block Terms: Uniqueness and Irreducibility

Dana LAHAT[1,2,3], Christian JUTTEN[4,1,5,6]
1: CNRS, France; 2: IRIT, France; 3: Université de Toulouse, France; 4: Univ. Grenoble Alpes, France; 5: Grenoble INP, France; 6: GIPSA-lab, France

Why deep learning methods for inverse problems typically become unstable

Nina Maria GOTTSCHLING, Anders Christian HANSEN
University of Cambridge, United Kingdom

Accelerating First-Order Methods via Linear Prediction

Clarice POON[1], Jingwei LIANG[2]
1: University of Bath, United Kingdom; 2: University of Cambridge, United Kingdom

Active embedding search via noisy paired comparisons

Gregory Humberto CANAL, Andrew Kenneth MASSIMINO, Mark Andrew DAVENPORT, Christopher John ROZELL
Georgia Institute of Technology, United States of America

Benchmarking proximal methods acceleration enhancements for CS-acquired MR image analysis reconstruction

Zaccharie RAMZI[1,2,3], Philippe CIUCIU[1,2], Jean-Luc STARCK[3]
1: CEA - Neurospin, Gif-sur-Yvette, France; 2: INRIA - Parietal, Gif-sur-Yvette, France; 3: CEA - Cosmostat, Gif-sur-Yvette, France

Compressed sensing and the synthesis formulation

Claire BOYER[1], Jonas KAHN[2], Maximilian MARZ[3], Pierre WEISS[2]
1: Sorbonne Université; 2: CNRS, Université de Toulouse; 3: Technische Universitat Berlin

Compressive k-Means with Differential Privacy

Vincent SCHELLEKENS[1], Antoine CHATALIC[2], Florimond HOUSSIAU[3], Yves-Alexandre DE MONTJOYE[3], Laurent JACQUES[1], Rémi GRIBONVAL[2]
1: ICTEAM/ELEN, UCLouvain; 2: Univ Rennes, Inria, CNRS, IRISA; 3: Imperial College London

Compressive Phase Retrieval of Structured Signal

Milad BAKHSHIZADEH[1], Arian MALEKI[1], Shirin JALALI[2]
1: Columbia University, United States of America; 2: Nokia-Bell labs

Fusion of hyperspectral and multispectral infrared astronomical images

Claire GUILLOTEAU[1,2], Thomas OBERLIN[1], Olivier BERNE[2], Nicolas DOBIGEON[1]
1: IRIT-ENSEEIHT, France; 2: IRAP, France

GLIMPS: A Greedy Mixed-Integer Approach for Super Robust Matched Subspace Detection

Md Mahfuzur RAHMAN, Daniel PIMENTEL-ALARCÓN
Georgia State University, United States of America

Learning to Solve Inverse Problems with Neumann Networks

Davis GILTON[1], Greg ONGIE[2], Rebecca WILLETT[2]
1: University of Wisconsin-Madison; 2: University of Chicago

Local Convolutive Independent Vector Analysis for Reverberant Blind Source Separation

Fangchen FENG[1], Matthieu KOWALSKI[2]
1: APC, Univ. Paris Diderot, CNRS/IN2P3 CEA/Irfu, Obs. de Paris, Sorbonne Paris Cité; 2: Laboratoire des signaux et systèmes, Univ Paris-Sud, CNRS, CentraleSupélec, France

Non-uniform recovery guarantees for binary measurements

Laura THESING, Anders Christian HANSEN
University of Cambridge, United Kingdom

Nullspace Conditions for Block-Sparse Semidefinite Systems

Janin HEUER[1], Frederic MATTER[2], Marc E. PFETSCH[2], Thorsten THEOBALD[3]
1: TU Braunschweig, Germany; 2: TU Darmstadt Germany; 3: Goethe-Universität Frankfurt am Main, Germany

Numerical Computation for Orthogonal Low Rank Approximation of Tensors

Yu GUAN
Université catholique de Louvain

On the Weighting for Convolutional Sparse Coding

Diego CARRERA[1], Alessandro FOI[2], Giacomo BORACCHI[3], Brendt WOHLBERG[4]
1: STMicroelectronics, Italy; 2: Tampere University, Finland; 3: Politecnico di Milano, Italy; 4: Los Alamos National Laboratory, USA

One-Bit Compressed Sensing by Convex Relaxation of the Hamming Distance

Hans Christian JUNG[1], Johannes MALY[1], Lars PALZER[2], Alexander STOLLENWERK[1]
1: RWTH Aachen University, Germany; 2: Technical University of Munich, Germany

Outlier Detection Using Generative Models with Theoretical Performance Guarantees

Jirong YI[1], Duc Anh LE[1], Tianming WANG[2], Xiaodong WU[1], Weiyu XU[1]
1: Department of Electrical and Computer Engineering, University of Iowa, United States of America; 2: Institute of Computational Engineering and Science, University of Texas, United States of America

Reconstruction of partially sampled STEM-EELS images with atomic resolution

Etienne MONIER[1], Thomas OBERLIN[1], Nathalie BRUN[2], Nicolas DOBIGEON[1]
1: University of Toulouse, IRIT/INP-ENSEEIHT, Toulouse; 2: Laboratoire de Physique des Solides, CNRS UMR 8502, Univ. Paris-Sud, Univ. Paris-Saclay

Recovery results for dictionary learning with approximately known sparsity level

Marie-Christine PALI[1], Karin SCHNASS[1], Alexander STEINICKE[2]
1: University of Innsbruck, Austria; 2: University of Leoben, Austria

Robust penalized inference for Gaussian Scale Mixtures

Karina ASHURBEKOVA[1,2,3], Sophie ACHARD[1,2,4], Florence FORBES[1,3,4]
1: Univ. Grenoble Alpes, France; 2: GIPSA-lab; 3: INRIA; 4: CNRS

Simultaneous Inference and Denoising of Student-t Mixtures from Noisy Observations

Afonso TEODORO, Mário FIGUEIREDO
Instituto de Telecomunicações and Instituto Superior Técnico, University of Lisbon, Portugal

Sparse Dictionaries for Continuous-Domain Inverse Problems

Thomas DEBARRE, Shayan AZIZNEJAD, Michael UNSER
EPFL, Switzerland

Fast Numerical Methods for Convex Problems with Optimal Transport Regularization

John LEE, Christopher J. ROZELL
Georgia Institute of Technology, United States of America

Learning Fast Magnetic Resonance Imaging

Tomer WEISS[1], Sanketh VEDULA[1], Ortal SENOUF[1], Alex BRONSTEIN[1], Michael ZIBULEVSKY[1], Oleg MICHAILOVICH[2]
1: Technion, Israel; 2: University of Waterloo, Canada

Regularized Newton Sketch by Denoising Score Matching for Computed Tomography Reconstruction

Alessandro PERELLI, Martin S. ANDERSEN
Technical University of Denmark - DTU, Denmark

Sparse Nonnegative Tensor Decomposition for EEG Data

Deqing WANG[1,2], Fengyu CONG[1,2], Tapani RISTANIEMI[2]
1: School of Biomedical Engineering, Faculty of Electronic Information and Electrical Engineering, Dalian University of Technology, Dalian 116024, China; 2: Faculty of Information Technology, University of Jyväskylä, Jyväskylä 40100, Finland

Adaptive mixed grey wolf optimizer: toolbox for illustration and comparative study

Julien MAROT
Institut Fresnel, Aix Marseille Universite, France

Wednesday, July 3rd 2019

Lunch + Poster session 3
Room: **C101 - C103**

Sparse Group Model Selection

Bubacarr BAH[1], Jannis KURTZ[2], Oliver SCHAUDT[3]
1: AIMS South Africa, & Stellenbosch University; 2: RWTH Aachen University, Germany; 3: Research and Development, ZF Group, Germany

Sparse Signal Reconstruction with a Sign Oracle

Arthur MARMIN[1], Marc CASTELLA[2], Jean-Christophe PESQUET[1]
1: Center for Visual Computing, CentraleSupélec, INRIA, Université Paris-Saclay, France; 2: SAMOVAR, Télécom SudParis, CNRS, Université Paris-Saclay, CNRS, France

Stacked Sparse Non-Linear Blind Source Separation

Christophe KERVAZO, Jérôme BOBIN
CEA Saclay, France

Weighted group sparse compressed sensing for parametric function approximation

Jean-Luc BOUCHOT
Beijing Institute of Technology, China, People's Republic of

Deep learning for Magnetic Resonance Fingerprinting

Mohammad GOLBABAEE[1], Dongdong CHEN[2], Mike DAVIES[2], Carolin M. PIRKL[3], Marion MENZEL[3], Pedro A. GOMEZ[3]
1: University of Bath, United Kingdom; 2: University of Edinburgh, United Kingdom; 3: Technical University of Munich (TUM), GE Healthcare

A Rate-Distortion Framework for Explaining Deep Neural Network Decisions

Jan MACDONALD, Stephan WAELDCHEN, Sascha HAUCH, Gitta KUTYNIOK
Technische Universität Berlin, Germany

Alternating Minimization for Max-Affine Regression

Avishek GHOSH, Ashwin PANANJADY, Aditya GUNTUBOYINA, Kannan RAMCHANDRAN
University of California, Berkeley, United States of America

Deep Post-Processing for Sparse Image Deconvolution

Matthieu TERRIS[1], Abdullah ABDULLAZIZ[1], Arwa DABBECH[1], Ming JIANG[2], Audrey REPETTI[1], Jean-Christophe PESQUET[3], Yves WIAUX[1]
1: Heriot Watt University, United Kingdom; 2: Ecole Polytechnique Fédérale de Lausanne; 3: CentraleSupélec, Université Paris Saclay, Inria

Global optimization of L0-norm-based sparse approximation criteria with a branch-and-bound algorithm

Ramzi BEN MHENNI[1], Sébastien BOURGUIGNON[1], Jordan NININ[2]
1: LS2N, Ecole Centrale de Nantes, Nantes, France; 2: Lab-STICC, ENSTA Bretagne, Brest, France

Learning beamforming in ultrasound imaging

Sanketh VEDULA[1], Ortal SENOUF[1], Grigoriy ZURAKHOV[1], Alex BRONSTEIN[1], Oleg MICHAILOVICH[2], Michael ZIBULEVSKY[1]
1: Technion, Israel; 2: University of Waterloo, Canada

Local Linear Convergence of Variance Reduced Stochastic Gradient Methods for Low Complexity Regularization

Clarice POON[1], Jingwei LIANG[2], Carola-Bibiane SCHÖNLIEB[3]
1: University of Bath, United Kingdom; 2: University of Cambridge, United Kingdom; 3: University of Cambridge, United Kingdom

On the existence of stable and accurate neural networks for image reconstruction

Matthew John COLBROOK, Anders Christian HANSEN
University of Cambridge, United Kingdom

A Novel Smoothed Norm Ratio for Sparse Signal Restoration: Application to Mass Spectrometry

Afef CHERNI[1], Emilie CHOUZENOUX[2], Laurent DUVAL[3], Jean-Christophe PESQUET[2]
1: Aix Marseille Univ., CNRS, Centrale Marseille, I2M, Marseille, France.; 2: CVN, CentraleSupélec, INRIA Saclay and Univ. Paris Saclay.; 3: IFP Energies nouvelles, 1 et 4 avenue de Bois-Préau, 92852 Rueil-Malmaison Cedex

Reweighted l1 minimization for audio inpainting

Ondřej MOKRÝ, Pavel RAJMIC
Brno University of Technology, Czech Republic

Scanning Probe Microscopy with Continuous Line Probe

Han-Wen KUO, Anna Elisabeth DORFI, Daniel ESPOSITO, John WRIGHT
Columbia University, United States of America

Tensor-structured Dictionaries for Hyperspectral Imaging

Cássio F. DANTAS, Jérémy E. COHEN, Rémi GRIBONVAL
Univ Rennes, Inria, CNRS, IRISA

Advances in the recovery of binary sparse signals

Sophie M. FOSSON
Politecnico di Torino, Italy

An Online Algorithm with Recovery Guarantees for Expander Dictionary Learning

Michael James MURRAY[1,2], Jared TANNER[1,2]
1: University of Oxford, United Kingdom; 2: The Alan Turing Institute

Anomaly Detection in Wind Turbine Drivetrain Bearings using Sparse Coding with Dictionary Learning

Sergio MARTIN-DEL-CAMPO, Fredrik SANDIN
Luleå University of Technology, Sweden

Compressed Sensing of Image Sequences via Multiple Total Variation

Shih-Wei HU, Gang-Xuan LIN, Sung-Hsien HSIEH, Chun-Shien LU
Academia Sinica, Taiwan

Image Recovery by Generative Models and Back-Projections

Tom TIRER[1], Raja GIRYES[2]
1: Tel Aviv University, Israel; 2: Tel Aviv University, Israel

Parallel Cut Pursuit For Minimization of the Graph Total-Variation

Hugo RAGUET[1], Loic LANDRIEU[2]
1: INSA Centre Val-de-Loire, Université de Tours, LIFAT, France; 2: Université Paris-Est, LASTIG, MATIS, IGN, ENSG, France

Precise Recovery in Two-Dimensional Blind Super-Resolution via Convex Optimization

Mohamed Abdalla Elhag SULIMAN, Wei DAI
Imperial College London, United Kingdom

Reconstruction of FRI Signals using Deep Neural Networks

Vincent Chi Hang LEUNG, Jun-Jie HUANG, Pier Luigi DRAGOTTI
Imperial College London, United Kingdom

Sparse BSS with spectral variabilities

Imane EL HAMZAOUI, Jérôme BOBIN
CEA, France

Jointly sparse recovery via manifold optimization

Armenak PETROSYAN, Hoang TRAN, Clayton WEBSTER
Oak Ridge National Laboratory, United States of America

Short-and-Sparse Deconvolution - A Geometric Approach

Yenson LAU[1], Qing QU[2], Han-Wen KUO[1], Pengcheng ZHOU[3], Yuqian ZHANG[4], John WRIGHT[1,5]
1: Department of Electrical Engineering and Data Science Institute, Columbia University; 2: Center for Data Science, New York University; 3: Center for Neurocience, Columbia University; 4: Department of Computer Science, Cornell University; 5: Department of Applied Physics and Applied Mathematics, Columbia University

Separability/identifiability properties of low-rank matrix factorization methods for bilinear mixtures of source signals

Yannick DEVILLE
University of Toulouse, France

An IRLS Approach for Low-Rank Matrix Factorization

Paris GIAMPOURAS, Athanasios RONTOGIANNIS, Konstantinos KOUTROUMBAS
National Observatory of Athens, Greece

Thursday, July 4th 2019

Lunch + Poster session 4
Room: **C101 - C103**

Structured Signal Recovery from Quadratic Measurements

Kaihui LIU[1], Feiyu WANG[2], Liangtian WAN[3]
1: University of Electronic Science and Technology of China; 2: University of Electronic Science and Technology of China; 3: Dalian University of Technology

The Sliding Frank-Wolfe Algorithm for the BLASSO

Quentin DENOYELLE[1], Vincent DUVAL[2], Gabriel PEYRE[3], Emmanuel SOUBIES[4]
1: EPFL, BIG; 2: INRIA Paris, MOKAPLAN; 3: CNRS, ENS; 4: CNRS, IRIT

Tissue Reflectivity Function Restoration from Fundamental and Harmonic Ultrasound Images

Mohamad HOURANI[1], Adrian BASARAB[2], Denis KOUAME[2], Jean-Yves TOURNERET[1]
1: University of Toulouse, INP-ENSEEIHT, IRIT, CNRS UMR 5505; 2: University of Toulouse, Université Paul Sabatier,IRIT, CNRS UMR 5505

A Fully Convolutional Network for MR Fingerprinting

Dongdong CHEN[1], Mohammad GOLBABAEE[2], Pedro A. GOMEZ[3,4], Marion I. MENZEL[3], Mike E. DAVIES[1]
1: The University of Edinburgh, United Kingdom; 2: University of Bath, United Kingdom; 3: Technical University of Munich, Germany; 4: GE Healthcare, Germany

Efficient Approximation of Solutions of Parametric PDEs by ReLU Neural Networks

Gitta KUTYNIOK[1], Philipp PETERSEN[2], Mones RASLAN[1], Reinhold SCHNEIDER[1]
1: Technische Universität Berlin, Germany; 2: University of Oxford, United Kingdom

An Inexact Augmented Lagrangian Framework for Non-Convex Optimization with Nonlinear Constraints

Mehmet Fatih SAHIN, Armin EFTEKHARI, Ahmet ALACAOGLU, Fabian LATORRE, Volkan CEVHER
EPFL, Switzerland

Ergodic bilevel optimization

Christoph BRAUER, Dirk LORENZ
TU Braunschweig, Germany

Learning low-dimensional surfaces and functions

Qing ZOU, Mathews JACOB
University of Iowa, United States of America

Unsupervised parameter selection in variational regularization

Zeljko KERETA[1], Ernesto DE VITO[2], Valeriya NAUMOVA[1]
1: Simula Research Laboratory, Norway; 2: Universita di Genova, DIMA, Italy

Exact recovery analysis of non-negative orthogonal matching pursuit

Thanh T. NGUYEN[1], Charles SOUSSEN[2], Jerome IDIER[3], El-Hadi DJERMOUNE[1]
1: CRAN, Universite de Lorraine, France; 2: L2S, CentraleSupelec, France; 3: LS2N, CNRS, France

Manifold Alignment by Feature Correspondence

Jay S STANLEY III[1], Scott GIGANTE[1], Guy WOLF[2], Smita KRISHNASWAMY[1]
1: Yale University, United States of America; 2: Université de Montréal, Canada

A Deep Analysis Dictionary Model

Jun-Jie HUANG, Pier Luigi DRAGOTTI
Imperial College London, United Kingdom

A recipe for inexact certificates in ℓ_1-analysis interpolation

Rodrigo CERQUEIRA GONZALEZ PENA
EPFL, Switzerland

Distributed First-Order Optimization with Tamed Communications

Dmitry GRISHCHENKO[1], Franck IUTZELER[1], Jerome MALICK[2]
1: University Grenoble Alpes; 2: CNRS

Exact recovery of partially sparse vectors

Christoph BRAUER[1], Dirk LORENZ[1], Andreas TILLMANN[2]
1: TU Braunschweig, Germany; 2: RWTH Aachen University, Germany

Flexible sparse regularization with general non-convex penalties

Dirk LORENZ[1], Elena RESMERITA[2]
1: TU Braunschweig, Germany; 2: Alpen-Adria Universität Klagenfurt, Austria

Hyperspectral Uncertainty Quantification by Optimization

Abdullah ABDULAZIZ, Audrey REPETTI, Yves WIAUX
Heriot-Watt University, United Kingdom

Label-consistent sparse auto-encoders

Thomas ROLLAND[1,2], Adrian BASARAB[1], Thomas PELLEGRINI[1]
1: IRIT, Université Paul Sabatier, CNRS; 2: INESC-ID

Natural Variation Transfer using Learned Manifold Operators

Marissa CONNOR[1], Benjamin CULPEPPER[2], Huy NGUYEN[2], Christopher ROZELL[1]
1: Georgia Institute of Technology, United States of America; 2: Yahoo! Research, United State of America

NMF-based sparse unmixing of complex mixtures.

Afef CHERNI[1], Elena PIERSANTI[2], Caroline CHAUX[1]
1: Aix Marseille Univ, CNRS, Centrale Marseille, I2M, Marseille, France.; 2: Aix Marseille Univ, CNRS, Centrale Marseille, iSM2, Marseille, France.

Performance of Compressive Sensing for Hadamard-Haar Systems

Amirafshar MOSHTAGHPOUR[1], José M. BIOUCAS DIAS[2], Laurent JACQUES[1]
1: ISPGroup, ICTEAM/ELEN, UCLouvain, Belgium; 2: IT, IST, Universidade de Lisboa, Portugal

Robust Super-Resolution via Deep Learning and TV Priors

Marija VELLA, Colin RICKMAN, Joao F.C. MOTA
Heriot-Watt University, United Kingdom

Sampling over spiraling curves

Felipe NEGREIRA[1], Philippe JAMING[1], José Luis ROMERO[2,3]
1: Université de Bordeaux, France; 2: Faculty of Mathematitcs, University of Vienna; 3: Acoustics Research Institute, Austrian Academy of Science

Stochastic Signal Processing in Phase Space

Ron LEVIE[1], Haim AVRON[2], Gitta KUTYNIOK[1]
1: Technische Universität Berlin, Germany; 2: Tel Aviv University, Israel

Tight Framelets and Fast Framelet Filter Bank Transforms on Manifolds

Yu Guang WANG[1], Xiaosheng ZHUANG[2]
1: The University of New South Wales, Sydney, Australia; 2: City University of Hong Kong, Hong Kong S.A.R. (China)

On variable splitting for Markov chain Monte Carlo

Maxime VONO[1], Nicolas DOBIGEON[1], Pierre CHAINAIS[2]
1: University of Toulouse - INP/ENSEEIHT (IRIT), France; 2: Ecole Centrale de Lille (CRIStAL), France

Fast Double-coupled Nonnegative Tensor Decomposition

Xiulin WANG[1,2], Tapani RISTANIEMI[2], Fengyu CONG[1,2]
1: Dalian University of Technology, China, People's Republic of; 2: University of Jyväskylä, Finland

Structured Discrete Shape Approximation

Andreas Michael TILLMANN, Leif KOBBELT
RWTH Aachen University, Germany

Antisparse Blind Source Separation

Renan Del Buono BROTTO[1], Kenji NOSE-FILHO[2], João Marcos Travassos ROMANO[1]
1: University of Campinas, Brazil; 2: Federal University of ABC