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SOTIRIOS A. TSAFTARIS, Ph.D.

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EDUCATION

PhD in Electrical Engineering and Computer Science   *2006*
  Northwestern University, Evanston, IL

MSc in Electrical and Computer Engineering   *2003*
  Northwestern University, Evanston, IL

Diploma in Electrical and Computer Engineering   *2000*
  Aristotle University of Thessaloniki, Greece

CURRENT EMPLOYER

Address: IDCOM-Institute of Digital Communications, School of Engineering, Room 2.06, Alexander Graham Bell Building, The King's Buildings, Thomas Bayes Rd, Edinburgh EH9 3FG, UK
Position: Chancellor's Fellow (Senior Lecturer Grade)
Duties/responsibilities:
- As a leader of my research team at IDCOM it is my responsibility and duty to:
  - develop a research program in pattern recognition and image analysis with applications in medicine, biology, and natural sciences;
  - solicit funding, and recruit research staff; and
  - be a member of the student selection committee, and the faculty and academic councils.
- As a faculty:
  - I supervise research staff (postdocs, PhD students, and interns); and
  - I teach courses at the undergraduate/post-graduate level, within the Electrical Engineering Discipline

EMPLOYMENT HISTORY

Chancellor's Fellow (Senior Lecturer Grade), The University of Edinburgh   *September 2015 – Present*
  Institute of Digital Communications, School of Engineering - http://tsaftaris.com

Director, IMT Institute for Advanced Studies Lucca (Italy)   *July 2012 – Present*
  Pattern Recognition and Image Analysis Unit (PRIAn) - http://prian.imtlucca.it

Assistant Professor, IMT Institute for Advanced Studies Lucca (Italy)   *September 2011 – 2015*
  Area of Computer Science and Applications

Adjunct Assistant Professor, Northwestern University (USA)   *July 2011 – Present*
  Departments of Electrical Engineering and Computer Science and Radiology, Feinberg School of Medicine

Research Assistant Professor, Northwestern University (USA)   *January 2009 – July 2011*
  Department of Radiology, Feinberg School of Medicine

Research Assistant Professor, Northwestern University (USA)   *November 2006 – July 2011*
  Department of Electrical Engineering and Computer Science

Visiting Researcher, Meiji University (Japan)   *September 2005*
  Institute of Applied DNA Computing, Kanagawa-Ken

Research Assistant, Northwestern University (USA)   *July 2002 – July 2006*
  Department of Electrical Engineering and Computer Science,
  Image & Video Processing Laboratory

Graduate Researcher, CERTH (Greece)   *September 2000 – July 2001*
  Informatics & Telematics Institute, Center for Research and
  Technology Hellas (CERTH) Greece

PROFILE AT A GLANCE

- More than **100** accepted **publications** of multidisciplinary character in peer reviewed journals (highly ranked in medical imaging and image processing) and conferences: >50 without my PhD advisor
- Predominantly **interdisciplinary** research, of high risk / high reward, in ground breaking subjects, with focus on the intersection of image analysis, computer vision, machine learning, life and natural sciences.
- Work **recognized** with awards, journal covers, prestigious fellowships, and large media coverage
- Extensive **funding** record at national and international level
- Large network of **collaborators** in academia and industry
- Strong record of **service** to the academic community and university administration
- Extensive record of **supervision** of staff/students
- Excellent **teaching** record (at 3 institutions, both graduate and undergraduate)
- Overview of research production
  - **Cardiovascular Image Analysis (MRI, BOLD, angiography)**;
    Major impact: new biomarkers for cardiac BOLD MRI that offer superior sensitivity and specificity, new visualization of the effects, and new techniques rooted in signal processing.
    Recognized by best paper awards and extensive NIH funding
  - **Image and Video Analytics for Surveillance (application aware compression and analytics)**;
    Major impact: developed algorithms that can compress data being aware of the analytics performed after compression and also participated in developing data mining methods for analytics.
    Recognized by several US government grants.
  - **High performance computing (cloud)**;
    Major impact: proposed the use of commercial clouds to accelerate the large-scale data analysis in imaging applications, and learning methods to predict computational cost
    Recognized by industry support from PiCloud-Multyvac in the form of in kind contribution to my lab, a grant award to M. Minervini (one of my PhD students), and most importantly PiCloud choosing IMT as a [pilot no cost showcase](#) of their academic offerings.
  - **Image analysis for cultural heritage (painting colorization)**;
    Major impact: first to show that image restoration algorithms can be used to colorize digital images of paintings
    Recognized by journal cover (*IEEE Signal Processing Magazine*) and extensive media attention
  - **Image analysis for agriculture (phenotyping of plants)**;
    Major impact: proposed a centralized web-based (on the cloud) system for the analysis of plant images using cheap sensors and incremental machine learning approaches to extract plant area, leaf shape, and vein networks
    Recognized by Marie Curie award (grant) and partnership with the iPLANT collaborative (USA)
  - **Image analysis for brain (MRI of small animals)**;
    Major impact: developed automated pipelines for segmentation, diffeomorphic registration, and cortical thickness estimation using cloud-based resources for MRI phenotyping of inbred mice strains.
  - **Image analysis for biology (AFM, microarrays)**;
    Major impact: proposed several restoration formulations for denoising, distortion correction in atomic force microscopy, DNA microarray imaging
  - **Molecular computing (DNA based digital signal processing, thermodynamic simulations)**;
    Major impact: ability to store and process signals in DNA, opened a new direction in signal processing.
    Recognized by awards, invited articles (e.g., *Proceedings of the IEEE*), media attention and funding

AWARDS AND HONORS

Magna Cum Laude Award, top paper International Society for Magnetic Resonance in Medicine (ISMRM)	*May 2012 & 2014*
Early Career Award finalist, Society for Cardiovascular Magnetic Resonance (SCMR)	*February 2011*
Distinguished Reviewer, Journal of Magnetic Resonance Imaging	*Years 2011 and 2012*
New Entrant Stipend Award, International Society for Magnetic Resonance in Medicine (ISMRM)	*February 2008*
Alexander S. Onassis Postgraduate Scholarship, Onassis Foundation	*September 2001 – August 2005*
Murphy Fellowship, Northwestern University	*September 2001 – September 2002*
Award of Excellence, Technical Chamber of Greece	*September 2001 – September 2002*

GRANTS

Ongoing:
- National Institutes of Health (USA) (Co-Investigator, PI: Dharmakumar)   9/13-9/17
  Reliable Evaluation of Coronary Artery Disease using Myocardial BOLD MRI with CO2

Completed:
- Marie Curie International Reintegration Grant (EU-FP7) (Principal Investigator PI)   9/11-9/15
  PHIDIAS: Phenotyping with a High-throughput, Intelligent, Distributed, and Interactive Analysis System
- Istituto Italiano di Tecnologia (Italy) (Key Personnel, PI: Caldarelli)   1/12-12/14
  APriCoR: Analysis of Patterns in Correlations
- Italian Ministry of Education, University and Research (Key Personnel, PI: Riccaboni)   9/12 - 10/14
  FIRB Futuro in Ricerca 2012 Linea 3 - ViWaN, The global virtual-water network: social, economic, and environmental implications.
- PiCloud Computing Inc (San Francisco, USA) (PI) (in kind contribution)   4/12-12/13
  Use of commercial clouds for large scale analysis
- National Institutes of Health (USA) (Key Personnel, PI: Dharmakumar)   4/08-3/13
  4D SSFP MRI for Detecting Functionally Important Coronary Artery Stenosis at Rest
- CCITT – US Department of Transportation (USA) (co-PI, PI: Katsaggelos)   4/11-12/12
  iTRAC-w: Intelligent Compression and Transmission of Traffic Video
- CCITT – US Department of Transportation (USA) (PI)   4/09-8/10
  iTRAC: Intelligent Compression of Traffic Video
- CCITT – US Department of Transportation (USA) (co-PI, PI: Katsaggelos)   1/08-1/10
  Video Traffic Analysis for Abnormal Event Detection
- The Andrew Mellon Foundation - Art Institute of Chicago (USA) (co-PI, PI: Katsaggelos)   10/07-12/08
  Turning back the hand of time: digital reconstruction of early versions of Matisse's "Bathers by a River"
- The San Diego Foundation (USA) (co-PI, PI: Katsaggelos)   10/06-4/08
  Universal Microarrays for High Throughput Gene Analysis

PROFESSIONAL AND ACADEMIC ACTIVITIES

NIH Panel Reviewer   *June/July 2009*
  Reviewed challenge grant applications for the Surgical Sciences, Biomedical Imaging and Bioengineering special emphasis panel.

Grant Reviewer   *July 2011*
  German Federal Ministry of Education and Research

Associate Editor   *July 2011– Present*
- IEEE Journal of Biomedical and Health Informatics (formerly IEEE Transactions on Information Technology in Biomedicine) 7/2011
- Digital Signal Processing (DSP), Elsevier 7/2014

                                                          December 2012– Present
Editorial Board
  ISRN Biomedical Imaging

Workshop Organizer   *2014– Present*
  Computer Vision Problems in Plant Phenotyping - European Conference on Computer Vision (ECCV) 2014
  Computer Vision Problems in Plant Phenotyping - British Machine Vision Conference (BMVC) 2015
  Simulation and Synthesis in Medical Imaging - Medical Image Computing and Computer Assisted Interventions (MICCAI) 2016

Guest Editor   *September 2014 & 2015*
  Simulation and Synthesis in Medical Imaging – IEEE Transactions on Medical Imaging 2017
  Joint Special Issue on Reproducible Research in Signal Processing - Digital Signal Processing & Software X 2016
  Computer Vision and Image Analysis in Plant Phenotyping - Machine Vision and Applications 2015

2001 – Present

Technical Program Committee Member
IEEE IPTA 2012, Special Session on High Performance Computing in Computer Vision Applications, Istanbul Turkey (2012); 4th International Symposium on Information Technologies in Environmental Engineering, Thessaloniki, Greece (2009); Kellogg Nanobusiness Conference, Evanston, IL (2004); Int. Conference on Augmented, Virtual Environments and Three-Dimensional Imaging, Mykonos, Greece (2001)

Reviewer   *2001 – Present*
- IEEE Transactions on Image Processing, Signal Processing, Information Technology in Biomedicine, Circuits and Systems for Video Technology, Information Forensics & Security, Computational Biology and Bioinformatics
- Circulation; JACC; PloS Biology; Nature Scientific Reports; Journal of Magnetic Resonance Imaging; EURASIP Journal of Applied Signal Processing; Computerized Medical Imaging and Graphics
- IEEE International Conferences on Image Processing (ICIP), on Acoustics, Speech, and Signal Processing (ICASSP); International Conference of Digital Signal Processing
- International Conference of the International Society for Magnetic Resonance in Medicine (ISMRM)

TEACHING, ADVISING, AND UNIVERSITY SERVICE

TEACHING (Undergraduate**; G**raduate**)**

- **University of Edinburgh (UK):**

  Lecturer, Advanced Concepts in Signal Processing (PGEE11020) – MSc   *Winter 2017*
  Lecturer, Signals and Communication Systems 3 (ENM532.1410.3) – UG   *Winter 2016/2017*

- **IMT Institute for Advanced Studies (Italy):**

  Coordinator, PhD Curriculum in Image Analysis of the Computer, Decision,   *Academic years 2012-2014*
         and Systems Science / CDSS track – G
  Lecturer, Pattern Recognition and Machine Learning – G   *Academic years 2012-2014*
  Lecturer, Large Scale Image Analysis for Natural and Life Sciences – G   *Academic years 2012-2014*
  Lecturer, Advanced Topics in Image Analysis – G   *Academic years 2013-2014*

- **Northwestern University (USA):**

  Lecturer, Introduction to Electrical Engineering (EECS 202) – U   *Academic years 2008-2010*
  Teaching Assistant, Digital Signal Processing (ECE 359) – UG   *Fall 2003 & Fall 2004*
  Guest Lecturer, Multimedia Signal Processing (ECE 420) – G   *Spring 2005*
  Guest Lecturer, Digital Image Processing (ECE 420) – G   *Winter 2004 & Winter 2005*
  Guest Lecturer, Signals and Systems (EECS 222) – U   *Spring 2003 & Winter 2008*

- **Mediterranean Agronomic Institute of Chania (Greece):**

  Visiting Lecturer, Advanced Topics in Digital Image Analysis (ENM532.1410.3) – G   *June 2013/2014*

STUDENT ADVISING & STAFF SUPERVISION (unless otherwise noted I had the sole role)

1. V. Giuffrida (IMT PhD, -), *Dissertation*, Invariant Image Representations
2. V. Sevetlidis (IMT PhD, -), *Dissertation*, Modality Synthesis in Cardiac MRI
3. I. Oksuz (IMT PhD, -), *Dissertation*, Cardiovascular BOLD MRI registration
4. M. Minervini (IMT PhD, PhD 2015), *Dissertation*, Affordable Sensing and Application-aware Compression (now at IMT)
5. A. Mukhopadhyay, (IMT PostDoc, PhD USA 2014), *PostDoc*, Cardiac MR segmentation (now at Open University of Berlin, Germany)
6. M. Bevilacqua, (IMT PostDoc, PhD France 2014), *PostDoc*, Ischemia detection with dictionary learning (now at University of Bordeaux, France)
7. C. Rusu, (IMT PostDoc, PhD Romania 2012), *PostDoc*, shift-invariant dictionary learning (now at Universita di Vigo, Spain)
8. Z. Chen (NU PhD, 2014), *Dissertation*, Surveillance Aware Video Compression Transmission [A] (now at Google)
9. M. Damiano (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (structural)[B] (now MSc student at Univ. of Trieste)
10. L. Dodero (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (DTI)[B] (now PhD student at Univ. of Genova)

11. E. Soyak (NU PhD, 2011), *Dissertation*, Surveillance Aware Video Compression [A] (now at AirTies Wireless Networks)
12. F. Yang (NU PhD, 2011), *Dissertation*, Surveillance Analytics and Mining [A] (now at Amazon)
13. K. Hayashi (NU BSc, 2011), *Undergraduate project*, Painting restoration and Illumination correction (now at TapSense)
14. B. Cheng (NU BSc, 2011), *Undergraduate project*, DNA thermodynamics (now at PepsiCo)
15. D. Babacan (NU PhD, 2009), *Project*, Surveillance Analytics and Object Tracking [A] (now at Google)
16. E. Maani (NU PhD, 2009), *Project*, Video Fingerprinting [A] (now at Sony)
17. M. Luessi (NU MSc, 2008), *Thesis*, Video Up-rate Conversion [A] (now at Harvard–Martinos Center)
18. R. Chin (NU BSc, 2008), *Undergraduate project*, Cardiac MRI image registration (now at Abbott Medical Optics)
19. A. Targowska (NU BSc, 2008), *Undergraduate project*, Painting Restoration [A] (now at McAndrews, Held & Malloy, Ltd)
20. A. Schlegel (NU-HSR, 2007), *diploma thesis*, Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking [A]
21. V. Andermatt (NU-HSR, 2007), *diploma thesis,* Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking [A]
22. D. Shiel (NU MSc, 2007), *Thesis*, AV Speech Recognition with Active Contour [A] (now at EdgeCast)
23. R. Ahuja (NU MSc, 2006), *Thesis*, DNA Microarray Image Analysis [A] (now at XR Trading)
    Co-supervision: [A] Together with Prof. Katsaggelos from Northwestern University (NU); [B] Together with Dr. Gozzi from Istituto Italiano di Tecnologia (IIT)

UNIVERSITY SERVICE

Committee Member, Computing Committee   *September 2012 – Present*
  IMT Institute for Advanced Studies Lucca, Italy

Committee Member, Faculty Council   *January 2012 – Present*
  IMT Institute for Advanced Studies Lucca, Italy

Committee Member, Academic Council   *September 2011 – Present*
  IMT Institute for Advanced Studies Lucca, Italy

Committee Member, Graduate Student Advisor Committee   *June 2004 – June 2006*
  McCormick School of Engineering & Applied Sciences, Northwestern University

International Liaison, Chair   *September 2004 – June 2006*
  Northwestern University Nanoalliance

Committee Member, Graduate and Curriculum Committee   *September 2003 – September 2006*
  Northwestern University, Department of Electrical Engineering and Computer Science

MEMBERSHIP IN PROFESSIONAL BODIES

Italian Association for Pattern Recognition (Italian Chapter of IAPR)   *September 2012– Present*
Society for Cardiovascular Magnetic Resonance (SCMR)   *December 2010 – Present*
International Society for Magnetic Resonance in Medicine (ISMRM)   *February 2008 – Present*
Institute of Electrical and Computer Engineers (IEEE)   *July 2002 – Present*
Hellenic Association of Mechanical & Electrical Engineers   *November 2000 – Present*
Technical Chamber of Greece   *November 2000 – Present*

SEMINARS AND INVITED PRESENTATIONS (SELECTED)

1. "Affordable plant phenotyping: the challenges and opportunities," The University of Nottingham, Host: Prof. Pridmore, Nov. 2015.
2. "Personalized 'needle-free' imaging for cardiac MRI," University of Sheffield, Host: Prof. Frangi, Nov. 2015.
3. " 'Needle free' ischemia assessment with cardiac BOLD MRI**,"** Queens Medical Research Institute (Edinburgh), Host: Dr Semple, Nov. 2015.
4. "Computer Vision and Phenotyping-A Match Made in Heaven", Italian Institute of Technology, Host: Prof. Murino, June 2015.
5. "Towards personalized 'one button imaging' for cardiac MRI," The University of Edinburgh, Host: Dr. Safari, June 2015.

6. "Affordable plant phenotyping: the challenges and opportunities," Juelich, Host: Dr. Scharr, Dec. 2014.
7. "Easy Plant Phenomics," Scientific support to agriculture: competitiveness, quality and sustainability, European Commission, Joint Research Center, Athens, Greece, April 2014.
8. "Affordable Plant Phenotyping," ENEA C.R. Casaccia UTAGRI - Green Biotechnologies Laboratory, Host: Dr. Giuliano, April 2013.
9. "Imaging-based phenotyping for life sciences," Dip. di Ingegneria dell'Informazione Università di Siena, Host: Prof. Gori, March 2012.
10. "Intelligent Video Compression for Tracking Applications," Dip. di Elettronica - Politecnico di Torino, Host: Prof. Magli, June 2010.
11. "Research in the intersection of signal processing and life sciences: From DNA and AFM, to MRI and back," at *University of Pennsylvania*, Dept. of Radiology, Host: Prof. Davatzikos, July 2008.
12. "Digital Signal Processing and Life Sciences: A Multiview Perspective," at *University of Chicago*, Dept. of Ecology and Evolution, Host: Prof. Borevitz, April 2008.
13. "The Molecular and Organic Future of Digital Signal Processing," at *University of Illinois at Chicago*, Dept. of Electrical and Computer Engineering, Host: Dr. Schonfeld, Oct 2007.
14. "Universal Microarrays with Thermodynamically Diverse Probes," *4th International Workshop on "Nanosciences & Nanotechnologies* (NN07), Thessaloniki Greece, 16-18 July 2007.
15. "DNA-Based Digital Signal Processing and its Application to Engineering Problems," Plenary Talk at *First International Meeting on Applications of DNA Computing to Engineering Problems*, Meiji University, Tokyo, Japan, Sept. 2005.
16. "Simulations of DNA based storage of digital signals," at *University of Tokyo*, Japan, Host: Prof. Suyama, Sept 2005.
17. "The Molecular Future of Digital Signal Processing," at:
    a. *Hong Kong University of Science & Technology*, Hong Kong, Host: Prof. Au, Sept 2005.
    b. *Uppsala University*, Uppsala Sweden, Host: Prof. Stoika, Aug 2005.
    c. *Ericsson Research,* Kista Sweden, Host: Dr. Karlsson, Aug 2005.
18. "DNA-Based Digital Signal Processing: Theory and Applications," *1st Kellogg Nanobusiness Conference: Exploring Opportunities in Nanobusiness*, Evanston, IL, USA, April 2004.
19. "DNA Computing: Applications in DSP, Security and Biotechnology," at *Integrated Genomics*, Chicago, IL, Host: Dr. Kyrpides, March 2004.

MAJOR COLLABORATORS

Universities/non-profits:
- Northwestern University (Prof. Katsaggelos; USA): Image Restoration, Compression
- Cedars-Sinai Medical Center (Profs Dharmakumar, Li; USA): Cardiovascular MRI
- Art Institute of Chicago (Dr. Casadio; USA): Cultural heritage preservation
- Istituto Italiano di Tecnologia (Drs Gozzi, Bifone; Italy): Small animal brain MRI
- iPlant Collaborative (Drs. Vaughn, Merchant, Noutsos; USA): Plant imaging, phenotyping
- Scuola Sant'Anna di Pisa (Prof. Perata; Italy): Plant phenotyping
- Australian National University (Prof. Borevitz; Australia): Plant phenotyping
- Forschungszentrum Jülich (Dr. Schaar; Germany): Computer vision in agriculture

Industry:
- Siemens Healthcare (Dr. Sven Zuehlsdorff; USA, Germany): Cardiovascular MRI
- Airties Wireless Networks (Dr. Eren Soyak; Turkey): Video transmission
- Multyvac (PiCloud Computing Inc.) (Mrs. Anthony Tin, CEO, Mr. Ken Elkabany, ex-CEO; USA): Large scale image analysis and cloud computing

SOFTWARE

- **Circulant Dictionary Learning:** An explicit formulation to shift invariant dictionary learning in MATLAB
- **Mouse MRI Phenotyping:** A collection of pipelines (scripts) for mouse phenotyping based on ANTs
- **Large Scale Image Analysis on Commercial Clouds:** A collection of python functions for PiCloud
- **A toolbox for Plant Phenotyping:** A MATLAB and Bisque-iPlant hosted implementation for plant segmentation and analysis
- **Phenotiki:** Open source open hardware platform for affordable plant phenotyping http://phenotiki.com
- **TiXiS-PiXiS:** DNA thermodynamics toolbox for MATLAB

For links and documentation see: http://prian.imtlucca.it/Software.html

MEDIA COVERAGE

Painting (Matisse) Colorization
- **more than 5000 appearances in online and print media**
- **Interviews and Articles (chronological order):**
  - *The New York Times*, 9 July 2010 ([link](#))
  - *McCormick News*, 12 July 2010 ([link](#))
  - *Northwestern University Front page*, 12 July 2010 ([link](#))
  - MSNBC's Cosmic Log, 12 July 2010 ([link](#))
  - *PhysOrg*, 12 July 2010 ([link](#))
  - *MIT Technology Review*, 19 July 2010 ([link](#))
  - *The Daily Northwestern*, 22 July 2010 ([link](#))
  - *TA NEA*, Greek Newspaper, 31 July 2010 ([link](#))
  - *McCormick Magazine*, Fall 2010 ([link](#))
  - *ΤΕΧΝΟΓΡΑΦΗΜΑ*, Article in Greek, Journal of Technical Chamber of Greece, 15 January 2011 ([link](#))
  - *Καθημερινή*, Greek Newspaper, 3 March 2011 ([link](#))

DNA-based digital signal processing
- **more than 3000 appearances in online and print media**
- **Interviews and Articles (chronological order):**
  - *McCormick News*, April 4 2008 ([link](#))
  - *PhysOrg*, April 7 2008 ([link](#))
  - *Science Daily*, April 8 2008 ([link](#))

PUBLICATIONS

Publications are presented in reverse chronological order. When possible, links to available PDF preprints are indicated as [PDF] or links to the publishers websites are indicated as [Full text].
Preprints can also be found at http://tsaftaris.com/Publications.html
Underlined names indicate (ex or current) student/RA/postdoc.

Refereed International Journals

1. M. Pagani, M. Damiano, S.A. Tsaftaris, and A. Gozzi, "Semi-automated registration-based anatomical labelling, voxel based morphometry and cortical thickness mapping of the mouse brain," Journal of Neuroscience Methods, ahead of print 15 Jul 2016. [PDF] [Full text]

2. R.B. Uriarte, F. Tiezzi, S.A. Tsaftaris, "Supporting Autonomic Management of Clouds: Service Clustering with Random Forest," IEEE Transactions on Network and Service Management, May 2016. [PDF] [Full text]

3. M. Bevilacqua, R. Dharmakumar, S.A. Tsaftaris, "Dictionary-driven Ischemia Detection from Cardiac Phase-Resolved Myocardial BOLD MRI at Rest," IEEE Trans on Medical Imaging, vol. 35, no. 1, pp. 282-93, Jan. 2016. [PDF] [Full text]

4. H. Scharr, M. Minervini, A. P. French, C. Klukas, D. M. Kramer, X. Liu, I. Luengo Muntión, J.-M. Pape, G. Polder, D. Vukadinovic, X. Yin, S. A. Tsaftaris, "Leaf segmentation in plant phenotyping: A collation study," Machine Vision and Applications, in press. [PDF] [Full text]

5. M. Minervini, A. Fischbach, H. Scharr, S. A. Tsaftaris, "Finely-grained annotated datasets for image-based plant phenotyping", Pattern Recognition Letters, in press. [PDF] [Full text] [website]

6. M. Minervini, H. Scharr, S.A. Tsaftaris, "The Significance of Image Compression in Plant Phenotyping Applications," Functional Plant Biology, vol. 42, no. 10, pp. 971-988. [Full text] [PDF]

7. M. Minervini, H. Scharr, S.A. Tsaftaris, "Image Analysis: the new bottleneck in plant phenotyping," IEEE Signal Processing Magazine, vol. 32, no. 4, pp. 126-131, 2015. [Full text] [PDF]

8. C. Rusu, R. Morisi, D. Boschetto, R. Dharmakumar, S.A. Tsaftaris, "Synthetic Generation of Myocardial Blood-Oxygen-Level-Dependent MRI Time Series via Structural Sparse Decomposition Modeling," IEEE Trans on Medical Imaging, vo. 33, no. 7, pp. 1422-33, Jul 2014. [Full text] [PMC] [PDF]

9. (invited) S.A. Tsaftaris, "A scientist's guide to cloud computing," Computing in Science and Engineering, vol. 16, no. 1, pp. 70-76, Jan.-Feb. 2014. [PDF]

10. S. Sannino, A. Gozzi, A. Cerasa, D. Scheggia, F. Manago', M. Damiano, A. Galbusera, D. De Pietri Tonelli, A. Bifone, S.A. Tsaftaris, D.R. Weinberger, G. Spalletta, F. Papaleo, "COMT genetic reduction produces sexually-divergent effects on cortical anatomy and working memory in mice and humans," Cerebral Cortex, vol. 25, no. 9, pp. 2529 2541, 2015. [Full text]

11. L. Dodero, M. Damiano, S.A. Tsaftaris, A. Galbusera, A. Bifone, M. L. Scattoni, A. Gozzi, "Neuroimaging Evidence of Major Morpho-Anatomical and Functional Abnormalities in the BTBR T+TF/J Mouse Model of Autism," PLoS One, vol. 8, no. 10, pp. e76655, 2013. [Full Text]

12. C. Rusu, D. Dumitrescu, S.A. Tsaftaris, "Explicit shift-invariant dictionary learning," IEEE Signal Processing Letters, vol. 21, no. 1, pp. 6-9, Jan 2014. [Full Text] [PDF]

13. I. Cokic, A. Kali, X. Wang, H.-J. Yang, R. L Tang, A. Thajudeen, M Shehata, A. M. Amorn, L. Enzhao, B. Stewart, N. Bennett, D. Harlev, S.A. Tsaftaris, W.M. Jackman, S. Chugh, R. Dharmakumar, "Iron Deposition Following Chronic Myocardial Infarction as a Substrate for Cardiac Electrical Anomalies: Initial Findings in a Canine Model," PLoS One, vol. 8, no. 9, pp. e73193, 2013. [Full text]

14. V. Tucci, T. Kleefstra, A. Hardy, I. Heise, S. Maggi, M. Willemsen, H. Hilton, C. Esapa, M. Simon, M.-T. Buenavista, L. Vizor, L. Dodero, S.A. Tsaftaris, R. Romero, W.M. Nillesen, L. Peart-Vissers, M. Kempers, A. Vulto-Van Siflhout, Z. Iqbal, M. Orlando, A. Maccione, G. Lassi, P. Farisello, A. Constestabile, T. Nieus, A. Raimondi, B. Greco, D. Cantatore, L. Gasparini, L. Berdondini, A. Bifone, A. Gozzi, S. Wells, P.M. Nolan, "Dominant β-catenin mutations cause intellectual disability with recognizable syndromic features," Journal of Clinical Investigation, vol. 124, no. 4, pp. 1468-82, April 2014. [Full text] [PMC]

15. H.-S. Yang, R. Yumul, R. Tang, I. Cokic, M. Klein, A. Kali, O. Sobczyk, D. Sharif, J. Tang, X. Bi, S.A. Tsaftaris, D. Li, A.H. Conte, J.A. Fisher, R. Dharmakumar, "Assessment of Myocardial Reactivity to Controlled Hypercapnia with Free-breathing T2-prepared Cardiac Blood-Oxygen-Level-Dependent MR Imaging," Radiology, vol. 272, no. 2, pp. 397-406, Aug. 2014. [Full text]

16. M. Minervini, C. Rusu, M. Damiano, V. Tucci, A. Bifone, A. Gozzi, S.A. Tsaftaris, "Large-Scale Analysis of Neuroimaging Data on Commercial Clouds with Content-Aware Resource Allocation Strategies," International Journal of High Performance Computing Applications, Jan 17, 2014. [Full text] [PDF]

17. M. Minervini, M.M. Abdelsamea, S.A. Tsaftaris, "Image based plant phenotyping with incremental learning and active contours," Ecological Informatics Journal, Special Issue on Multimedia in Ecology and Environment, vol. 23, pp. 35-48, Sept. 2014. [Full text] [PDF]

18. Z. Chen, E. Soyak, S.A. Tsaftaris, A. K. Katsaggelos, "Application-aware approach to compression and transmission of H.264 compressed video for automated and centralized transportation surveillance," *IEEE Trans. on Intelligent Transportation Systems*, vol. 14, no. 4, pp. 2002-7, Nov. 2013. [Full text] [PDF]

19. S.A. Tsaftaris, X. Zhou, R. Tang, D. Li, R. Dharmakumar, "Detecting Myocardial Ischemia at Rest with Cardiac Phase-Resolved BOLD CMR,"*Circulation Cardiovascular Imaging,* vol. 6, no 2, pp. 311-319, Mar 2013. [Full text]

20. A. Kali, A. Kumar, I. Cokic, R. Yang, S. A. Tsaftaris, R. Tang, D. Li, M.G. Friedrich, R. Dharmakumar "Chronic Manifestation of Post-Reperfusion Intramyocardial Hemorrhage as Regional Iron Deposition - A Cardiovascular MR Study with Ex-vivo Validation," *Circulation Cardiovascular Imaging,* vol. 6, no 2, pp. 218-28, Mar 2013. [Full text]

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