

EDUCATION

PhD in Electrical Engineering and Computer Science Northwestern University, Evanston, IL	2006
MSc in Electrical and Computer Engineering Northwestern University, Evanston, IL	2003
Diploma in Electrical and Computer Engineering Aristotle University of Thessaloniki, Greece	2000

CURRENT EMPLOYER

Address:	IMT Institute for Advanced Studies Lucca Piazza San Francesco 19, Lucca (LU) 55100 Italy
Positions/titles:	Director, Pattern Recognition and Image Analysis Unit (PRIAn - http://prian.imtlucca.it) Assistant Professor, Computer Science and Applications
Duties/responsibilities:	<ul style="list-style-type: none">As director of PRIAn (IMT consists of 8 research units) it is my responsibility and duty to:<ul style="list-style-type: none">develop a research program in pattern recognition and image analysis with applications in medicine, biology, and natural sciences;solicit funding, and recruit research staff; andbe a member of the student selection committee, and the faculty and academic councils.As a faculty:<ul style="list-style-type: none">I contribute in several administrative organs regarding teaching organization, and computational facilities management;I supervise research staff (postdocs, PhD students, and interns); andI teach courses at the PhD level.

EMPLOYMENT HISTORY

Director, IMT Institute for Advanced Studies Lucca (Italy) Pattern Recognition and Image Analysis Unit (PRIAn)	July 2012 – Present
Assistant Professor, IMT Institute for Advanced Studies Lucca (Italy) Area of Computer Science and Applications	September 2011 – Present
Adjunct Assistant Professor, Northwestern University (USA) Departments of Electrical Engineering and Computer Science and Radiology, Feinberg School of Medicine	July 2011 – Present
Research Assistant Professor, Northwestern University (USA) Department of Radiology, Feinberg School of Medicine	January 2009 – July 2011
Research Assistant Professor, Northwestern University (USA) Department of Electrical Engineering and Computer Science	November 2006 – July 2011
Visiting Researcher, Meiji University (Japan) Institute of Applied DNA Computing, Kanagawa-Ken	September 2005
Research Assistant, Northwestern University (USA) Department of Electrical Engineering and Computer Science, Image & Video Processing Laboratory	July 2002 – July 2006
Graduate Researcher, CERTH (Greece) Informatics & Telematics Institute, Center for Research and Technology Hellas (CERTH) Greece	September 2000 – July 2001

PROFILE AT A GLANCE

- **85** 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
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
- 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 – 0/14
FIRB Futuro in Ricerca 2012 Linea 3 - ViWaN, The global virtual-water network: social, economic, and environmental implications.

Completed:

- 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

Reviewed challenge grant applications for the Surgical Sciences, Biomedical Imaging and Bioengineering special emphasis panel.

June/July 2009

Grant Reviewer

German Federal Ministry of Education and Research

July 2011

Associate Editor

IEEE Journal of Biomedical and Health Informatics (formerly IEEE Transactions on Information Technology in Biomedicine)

July 2011– Present

Editorial Board

ISRN Biomedical Imaging

December 2012– Present

Workshop Organizer

Computer Vision Problems in Plant Phenotyping - European Conference on Computer Vision 2014 (ECCV)

September 2014

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)

2001 – Present

Reviewer

- 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

2001 – Present

- 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; Graduate)

- **IMT Institute for Advanced Studies (Italy):**
 - Responsible**, PhD Curriculum in Image Analysis of the Computer, Decision, and Systems Science / CDSS track – G *Academic years 2012-2014*
 - 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. I. Oksuz (IMT PhD, -), *Dissertation*, Cardiovascular BOLD MRI
 2. F. Zollo (IMT PhD, -), *Dissertation*, Multi-object segmentation
 3. C. Rusu, (IMT PostDoc, PhD Romania 2012), *PostDoc*, shift-invariant dictionary learning
 4. F. Sforazzini (IMT PhD, -), *Dissertation*, MRI brain connectivity^C
 5. M. Minervini (IMT PhD, -), *Dissertation*, Affordable Sensing and Application-aware Compression
 6. Z. Chen (NU PhD, -), *Dissertation*, Surveillance Aware Video Compression Transmission^A
 7. M. Damiano (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (structural)^B (now MSc student at Univ. of Trieste)
 8. L. Doderio (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (DTI)^B (now PhD student at Univ. of Genova)
 9. E. Soyak (NU PhD, 2011), *Dissertation*, Surveillance Aware Video Compression^A (now at AirTies Wireless Networks)
 10. F. Yang (NU PhD, 2011), *Dissertation*, Surveillance Analytics and Mining^A (now at Amazon)
 11. K. Hayashi (NU BSc, 2011), *Undergraduate project*, Painting restoration and Illumination correction (now at TapSense)
 12. B. Cheng (NU BSc, 2011), *Undergraduate project*, DNA thermodynamics (now at PepsiCo)
 13. R. Qian (NU BSc, 2011), *Undergraduate project*, Cardiac MRI image segmentation (now at MathWorks)
 14. D. Babacan (NU PhD, 2009), *Project*, Surveillance Analytics and Object Tracking^A (now at Google)
 15. E. Maani (NU PhD, 2009), *Project*, Video Fingerprinting^A (now at Sony)
 16. M. Luessi (NU MSc, 2008), *Thesis*, Video Up-rate Conversion^A (now at Harvard–Martinos Center)
 17. R. Chin (NU BSc, 2008), *Undergraduate project*, Cardiac MRI image registration (now at Abbott Medical Optics)
 18. A. Targowska (NU BSc, 2008), *Undergraduate project*, Painting Restoration^A (now at McAndrews, Held & Malloy, Ltd)
 19. A. Schlegel (NU-HSR, 2007), *diploma thesis*, Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking^A
 20. V. Andermatt (NU-HSR, 2007), *diploma thesis*, Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking^A
 21. D. Shiel (NU MSc, 2007), *Thesis*, AV Speech Recognition with Active Contour^A (now at EdgeCast)
 22. 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); **C** Together with Prof. Caldarelli from IMT Lucca

UNIVERSITY SERVICE

Committee Member, Computing Committee IMT Institute for Advanced Studies Lucca, Italy	<i>September 2012 – Present</i>
Committee Member, Faculty Council IMT Institute for Advanced Studies Lucca, Italy	<i>January 2012 – Present</i>
Committee Member, Academic Council IMT Institute for Advanced Studies Lucca, Italy	<i>September 2011 – Present</i>
Committee Member, Graduate Student Advisor Committee McCormick School of Engineering & Applied Sciences, Northwestern University	<i>June 2004 – June 2006</i>
International Liaison, Chair Northwestern University Nanoalliance	<i>September 2004 – June 2006</i>
Committee Member, Graduate and Curriculum Committee Northwestern University, Department of Electrical Engineering and Computer Science	<i>September 2003 – September 2006</i>

MEMBERSHIP IN PROFESSIONAL BODIES

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

SEMINARS AND INVITED PRESENTATIONS (SELECTED)

1. "Affordable Plant Phenotyping," ENEA C.R. Casaccia UTAGRI - Green Biotechnologies Laboratory, Host: Dr. Giuliano, April 2013.
2. "Imaging-based phenotyping for life sciences," Dip. di Ingegneria dell'Informazione Università di Siena, Host: Prof. Gori, March 2012.
3. "Intelligent Video Compression for Tracking Applications," Dip. di Elettronica - Politecnico di Torino, Host: Prof. Magli, June 2010.
4. "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.
5. "Digital Signal Processing and Life Sciences: A Multiview Perspective," at *University of Chicago*, Dept. of Ecology and Evolution, Host: Prof. Borevitz, April 2008.
6. "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.
7. "Universal Microarrays with Thermodynamically Diverse Probes," *4th International Workshop on Nanosciences & Nanotechnologies (NN07)*, Thessaloniki Greece, 16-18 July 2007.
8. "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.
9. "Simulations of DNA based storage of digital signals," at *University of Tokyo*, Japan, Host: Prof. Suyama, Sept 2005.
10. "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.
11. "DNA-Based Digital Signal Processing: Theory and Applications," *1st Kellogg Nanobusiness Conference: Exploring Opportunities in Nanobusiness*, Evanston, IL, USA, April 2004.
12. "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
- Oxford Centre for Clinical Magnetic Resonance Research (Dr. Karamitsos; UK): 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
- **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 [\[Full text\]](#). Underlined names indicate (ex or current) student/RA/postdoc.

Refereed International Journals

1. (invited) S.A. Tsaftaris, "A scientist's guide to cloud computing," *Computing in Science and Engineering*, in press. [\[PDF\]](#)
2. 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 in Medical Imaging*, under revision.
3. 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*, under revision.
4. L. Doderio, 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. [\[Full Text\]](#)
5. 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. [\[Full Text\]](#)
6. 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, and 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. [\[Full text\]](#)
7. V. Tucci, T. Kleefstra, A. Hardy, I. Heise, S. Maggi, M. Willemsen, H. Hilton, C. Esapa, M. Simon, M.-T. Buenavista, L. Vizer, L. Doderio, **S.A. Tsaftaris**, R. Romero, W.M. Nillesen, L. Peart-Vissers, M. Kempers, A. Vulto-Van Sifhout, 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*, under revision.
8. 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," *Radiology*, in press.
9. M. Minervini, C. Rusu, M. Damiano, V. Tucci, A. Bifone, A. Gozzi, and **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*, in press. [\[Full text\]](#)
10. 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*, 2013, in press [\[Full text\]](#).
11. 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. [\[Full text\]](#)
12. **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. [\[Full text\]](#)
13. 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. [\[Full text\]](#)
14. **S.A. Tsaftaris**, F. Casadio, J.-L. Andral, A.K. Katsaggelos, "A novel visualization tool for art history and conservation: automated colorization of black and white archival photographs of works of art," *Studies in Conservation*, in press. [\[PDF\]](#)
15. R. Dharmakumar, **S.A. Tsaftaris**, D. Li, "Myocardial Blood-Oxygen-Level-Dependent Magnetic Resonance Imaging with Balanced Steady-State Free Precession Imaging Approaches," *The Open Medical Imaging Journal*, Vol. 6, pp. 31-38, 2012. [\[Full text\]](#)
16. **S.A. Tsaftaris**, X. Zhou, R. Tang, D. Li, R. Dharmakumar, "Ischemic Extent as a Biomarker for Characterizing Severity of Coronary Artery Stenosis with Blood Oxygen-Sensitive Cardiac MRI," *Journal of Magnetic Resonance Imaging*, Vol 35, no. 6, pp. 1338 – 1348, 2012. [\[Full text\]](#)

17. E. Soyak, **S.A. Tsaftaris**, A. K. Katsaggelos, "Low-Complexity Video Compression for Automated Transportation Surveillance," *IEEE Transactions on Circuits and Systems for Video Technology, Special Issue on Video Analysis on Resource-Limited Systems*, vol. 21, no. 10, pp. 1378-1389, 2011. [\[Full text\]](#)
18. **S.A. Tsaftaris**, K. Lister, I. Fiedler, F. Casadio, A.K. Katsaggelos, "Colorizing a Masterpiece," *IEEE Signal Proc Mag*, vol. 28, no. 3, pp. 113-119, 2011. ([highlighted on the cover](#)) [\[PDF\]](#)
19. F. Jiang, J. Yuan, **S.A. Tsaftaris**, A.K. Katsaggelos, "Anomalous Video Event Detection Using Spatiotemporal Context", *Computer Vision and Image Understanding, Special issue on Feature-Oriented Image and Video Computing for Extracting Contexts and Semantics*, vol. 115, no. 3, pp. 323-333, 2011. [\[PDF\]](#)
20. X. Zhou, V. Rundell, Y. Liu, R. Tang, R. Klein, S. Shah, S. Zuehlisdrorff, **S.A. Tsaftaris**, D. Li, R. Dharmakumar, "T2-weighted STIR Imaging of Myocardial Edema Associated with Ischemia-Reperfusion Injury: The Influence of Proton Density Effect on Image Contrast," *Journal of Magnetic Resonance Imaging*, vol. 33, no. 4, pp. 962-967, 2011. [\[Full text\]](#)
21. X. Zhou, **S. A. Tsaftaris**, Y. Liu, R. Tang, R. Klein, S. Zuehlisdrorff, D. Li, R. Dharmakumar, "Artifact-reduced two-dimensional cine steady state free precession for myocardial blood-oxygen-level-dependent imaging," *Journal of Magnetic Resonance Imaging*, vol. 31, no. 4, pp. 863-871, 2010. [\[Full text\]](#)
22. **S.A. Tsaftaris**, E. Offerman, R. Edelman, I. Koktzoglou, "Fully Automated Reconstruction of Ungated Ghost Magnetic Resonance Angiograms Using Cluster Analysis", *Journal of Magnetic Resonance Imaging*, vol. 31, no. 3, pp. 655-662, 2010. [\[Full text\]](#)
23. R. Dharmakumar, Z. Zhang, I. Koktzoglou, **S.A. Tsaftaris**, D. Li, "Dual Contrast Cellular MRI," *Molecular Imaging*, vol. 8, no. 5, pp. 254-63, 2009. [\[Full text\]](#)
24. **S.A. Tsaftaris**, A.K. Katsaggelos, "Retrieval Efficiency of DNA-Based Databases of Digital Signals," *IEEE Transactions on NanoBioscience*, vol. 8, no. 3, pp. 259-270, 2009. [\[PDF\]](#)
25. (invited) **S.A. Tsaftaris**, A.K. Katsaggelos, "The Not So Digital Future of Digital Signal Processing," *Proceedings of the IEEE*, vol. 96, no. 3, pp. 375-377, 2008. [\[PDF\]](#)
26. (invited) **S.A. Tsaftaris**, V. Hatzimanikatis, A.K. Katsaggelos, "In silico estimation of annealing specificity of query searches in DNA databases", *Journal of Japan Society of Simulation Technology (JSST) special issue "Application and Simulation of DNA Computing"*, vol. 24, no. 4, pp. 268-276, Dec 2005. [\[PDF\]](#)
27. H. Wang, **S.A. Tsaftaris**, A.K. Katsaggelos, "Joint source-channel coding for wireless object-based video communications utilizing data hiding," *IEEE Trans. Image Processing*, vol. 15, no. 8, pp. 2158-2169, 2006. [\[PDF\]](#)
28. **S.A. Tsaftaris**, T.N. Pappas, E.T. Papoutsakis, A.K. Katsaggelos, "How can DNA-Computing be applied in Digital Signal Processing?" *IEEE Signal Proc Mag*, vol. 21, no. 6, pp. 57-61, 2004. [\[PDF\]](#)
29. **S.A. Tsaftaris**, T.N. Pappas, E.T. Papoutsakis, A.K. Katsaggelos, "DNA computing from a signal processing viewpoint", *IEEE Signal Proc Mag*, vol. 21, no. 5, pp. 100-106, 2004. [\[PDF\]](#)
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