

RESEARCH TRACK RECORD SUMMARY

- **Expertise** on machine learning theory and computational methods for representing data. Application focus in the area of extracting information from data in the natural and life sciences.
- **PhD** in 2006 from Northwestern University, USA in electrical engineering and computer science.
- **International work experience** in five countries (UK, USA, Italy, Greece, Japan).
- More than **140 publications** of multidisciplinary character in peer reviewed journals (highly ranked in medical image analysis and imaging) and conferences. Average impact factor = 4.1; h-index = 41.
- Work **recognized** with best paper awards (e.g. ISMRM, SCMR), journal covers (e.g. IEEE Signal Processing Magazine), prestigious fellowships (e.g. Onassis), and media coverage (New York Times, MIT Technology Review, and others). Invited to present as keynote (e.g. ICANN) or invited speaker.
- Extensive **funding** as principal or co- investigator (career £22.2 m) from EPSRC, BBSRC, NIH, and Industry
- Considerable **industry** impact and large network of **collaborators** in academia.
- Strong record of **service** to the academic community, including serving as editor and event organiser.
- Extensive record of **supervision** of students (6 current; 5 awarded) and research staff (current 2; alumni 5).

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: 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

Duties/responsibilities:

- As a leader of my research team at IDCOM it is my responsibility and duty to:
 - develop a research program in machine learning and image analysis with applications in medicine, biology, and natural sciences;
 - solicit funding, and recruit research staff; and
 - supervise and mentor team members
- As a faculty:
 - Participate in various committees and exam boards;
 - Teach courses at the undergraduate/post-graduate level (Electrical Engineering Discipline)

EMPLOYMENT HISTORY

Canon Medical/Royal Academy of Engineering Senior Research Fellow in Healthcare AI, The University of Edinburgh Institute of Digital Communications, School of Engineering - http://tsaftaris.com	April 2019 – Present
Chancellor's Fellow and Reader (US equiv. Associate Professor), The University of Edinburgh	August 2018 – Present
Turing Fellow, The Alan Turing Institute	September 2017 – Present
Chancellor's Fellow (Senior Lecturer Grade), The University of Edinburgh	September 2015 – July 2018
Director, IMT Institute for Advanced Studies Lucca (Italy) Pattern Recognition and Image Analysis Unit (PRIAn)	July 2012 – Oct 2016

Assistant Professor, IMT Institute for Advanced Studies Lucca (Italy) Area of Computer Science and Applications	<i>September 2011 – 2015</i>
Adjunct Assistant Professor, Northwestern University (USA) Departments of Electrical Engineering and Computer Science and Radiology, Feinberg School of Medicine	<i>July 2011 – Sept 2016</i>
Research Assistant Professor, Northwestern University (USA) Department of Radiology, Feinberg School of Medicine	<i>January 2009 – July 2011</i>
Research Assistant Professor, Northwestern University (USA) Department of Electrical Engineering and Computer Science	<i>November 2006 – July 2011</i>
Visiting Researcher, Meiji University (Japan) Institute of Applied DNA Computing, Kanagawa-Ken	<i>September 2005</i>
Research Assistant, Northwestern University (USA) Department of Electrical Engineering and Computer Science, Image & Video Processing Laboratory	<i>July 2002 – July 2006</i>
Graduate Researcher, CERTH (Greece) Informatics & Telematics Institute, Center for Research and Technology Hellas (CERTH) Greece	<i>September 2000 – July 2001</i>

AWARDS AND HONORS

Best regular paper Award , STACOM a MICCAI workshop	<i>September 2017</i>
Magna Cum Laude Award, top paper International Society for Magnetic Resonance in Medicine (ISMRM)	<i>May 2012 & 2014</i>
Early Career Award finalist , Society for Cardiovascular Magnetic Resonance (SCMR)	<i>February 2011</i>
Distinguished Reviewer , Journal of Magnetic Resonance Imaging	<i>Years 2011 and 2012</i>
New Entrant Stipend Award, International Society for Magnetic Resonance in Medicine (ISMRM)	<i>February 2008</i>
Alexander S. Onassis Postgraduate Scholarship , Onassis Foundation	<i>September 2001 – August 2005</i>
Murphy Fellowship , Northwestern University	<i>September 2001 – September 2002</i>
Award of Excellence , Technical Chamber of Greece	<i>September 2001 – September 2002</i>

GRANTS

Ongoing:

- Royal Academy of Engineering (RCSRF1819\8\25) (**PI**)
[£814,254: £189,254 from the Academy, £625,000 from Canon Medical]
4/19 – 3/24
Canon Medical / Royal Academy of Engineering Senior Research Fellow in Healthcare AI
- Innovate UK (**School of Engineering PI**; Edinburgh PI: Parsons, UoE EPCC; Overall PI: Grossman, CSO Scottish Government)
[£284,558 for School of Engineering; £611,000 for UoE; £16,000,000 total]
01/19 – 12/21
Industrial Centre for Artificial Intelligence Research in Digital Diagnostics (iCAIRD)
- EPSRC-Dstl (EP/S000631/1) (**co-I**; Overall PI: Davies, UoE)
[Total £4,092,206 ScE]
07/18-06/23
University Defense Research Collaboration [UDRC] 3: Signal Processing in the Information Age
- MRC (MR/R025746/1) (**Edinburgh PI**; Overall PI: Pridmore, Nottingham)
[£528,567 total]
09/18-08/22
PhenomUK - Crop Phenotyping: from Sensors to Knowledge [A technology touching life network]
- National Institutes of Health (USA) (R01HL136578) (**Edinburgh PI**; Overall PI: Dharmakumar, USA)
[£200,000 for School of Engineering; \$1,700,000M Total (£1,230,000)]
6/17-6/22
An Accurate Non-Contrast-Enhanced Cardiac MRI Method for Imaging Chronic Myocardial Infarctions: Technical Developments to Rapid Clinical Validation

6. BBSRC GCRF (BB/P023487/1) (**Engineering PI**; Overall PI: Doerner, UoE Biology)
[£284,558 for School of Engineering; £594,981 UoE Total]
05/17-12/18
Improving root system architecture for enhanced drought tolerance and nutrient use efficiency in semi-arid agriculture of chickpea

Completed:

1. EPSRC First grant (EP/P022928/1) (**PI**)
[£116,397 ScE]
09/17-01/19
CardiacA.I.: Machine learning for the analysis of multimodal cardiac MR images used in the diagnosis of coronary heart disease
2. BBSRC TRDF (BB/N02334X/1) (**Engineering PI**; Overall PI: McCormick, UoE Biology)
[£3,493 for the School of Engineering; £151,637 UoE Total]
10/16-3/18
An affordable active photometric system for capturing real-time 3D responses to vegetation dense environments
3. National Institutes of Health (USA) (**Edinburgh PI**, Overall PI: Dharmakumar)
[Transferred to UoE at £41,074; to ST £90,000; Total £1,100,000]
9/13-9/17
Reliable Evaluation of Coronary Artery Disease using Myocardial BOLD MRI with CO₂
4. Marie Curie International Reintegration Grant (EU-FP7) (**PI**)
[Total £85,000]
9/11-9/15
PHIDIAS: Phenotyping with a High-throughput, Intelligent, Distributed, and Interactive Analysis System
5. PiCloud Computing Inc (San Francisco, USA) (**PI**) (in kind contribution, Industrial)
[Total 30k in-kind]
6. 4/12-12/13
Use of commercial clouds for large-scale analysis
7. CCITT – US Department of Transportation (USA) (**Co-I**, Overall PI: Katsaggelos)
[Total £79,000]
4/11-12/12
iTRAC-w: Intelligent Compression and Transmission of Traffic Video
8. CCITT – US Department of Transportation (USA) (**PI**; co-I: Katsaggelos)
[Total £79,000]
4/09-8/10
iTRAC: Intelligent Compression of Traffic Video
9. CCITT – US Department of Transportation (USA) (**Co-I**, Overall PI: Katsaggelos)
[Total £79,000]
1/08-1/10
Video Traffic Analysis for Abnormal Event Detection
10. The Andrew Mellon Foundation - Art Institute of Chicago (USA) (**Co-I**, PI: Katsaggelos)
[Total £19,000]
10/07-12/08
Turning back the hand of time: digital reconstruction of early versions of Matisse's "Bathers by a River"
11. The San Diego Foundation (USA) (**Co-I**, PI: Katsaggelos)
[Total £76,000]
10/06-4/08
Universal Microarrays for High Throughput Gene Analysis

RELATIONSHIPS WITH INDUSTRY

- **Canon Medical Research Europe** (Dr Poole, Dr Smout, Dr O'Neil; UK): Deep learning in healthcare.
- **Medviso** (Dr Heiberg; Lund, Sweden): Cardiac segmentation and registration plugins for Segment
- **Siemens Healthcare** (Dr Zuehlsdorff; USA, Germany): Cardiovascular BOLD MRI imaging/analysis
- **PiCloud Computing Inc.** (now part of Dropbox) (Mr Elkabany, CEO; USA): Large-scale cloud computing in Python (served also as scientific advisor)

PROFESSIONAL AND ACADEMIC ACTIVITIES

Participation in policy and stakeholder events

July 2011–Present

- Chief Scientist's Office meeting to devise a Scottish-wide bid for the call on Creating a network of digital pathology, imaging and AI centres as part of the Industrial Strategy Challenge Fund, May 2018, Edinburgh
- AI: Stakeholders meeting, Royal College of Radiologists in partnership with The Alan Turing Institute, Health Data Research UK (HDR UK) and the Engineering and Physical Sciences Research Council, May 2018, London
- NHS Health and Social Care Network, Nov 2018, Aberdeen
- European Commission, Scientific support to agriculture: competitiveness, quality and sustainability, European Commission, Joint Research Center, April 2014 Athens, Greece
- Innovate UK, UK-US Meeting on Technology exchange for phenotyping, Jan 2017, Arizona, USA

Grant Reviewer

July 2009–Present

- National Institutes of Health (NIH, USA) Reviewed challenge grant applications for the Surgical Sciences, Biomedical Imaging and Bioengineering special emphasis panel. June/July 2009
- German Federal Ministry of Education and Research (Germany). July 2011
- Biotechnology and Biological Sciences Research Council (BBSRC, UK). Aug 2015
- Leverhulme Trust (UK). Mar 2016
- British Heart Foundation (BHF, UK). Aug 2017
- National Science Foundation (NSF, USA). Nov 2017
- Netherlands Organisation for Scientific Research (NWO). Aug 2017, Feb 2018
- European Research Council (ERC, EU). May 2018

Associate Editor

July 2011– Present

- IEEE Transactions on Medical Imaging, since 4/2018
- IEEE Journal of Biomedical and Health Informatics (formerly IEEE Transactions on Information Technology in Biomedicine), since 7/2011
- Digital Signal Processing (DSP), Elsevier 7/2014-4/2018

Guest Editor

September 2014 & 2015

[Simulation and Synthesis in Medical Imaging](#) – IEEE Transactions on Medical Imaging 2017 (with A. Frangi, Leeds; and J. Prince, John Hopkins University)

[Joint Special Issue on Reproducible Research in Signal Processing](#) - Digital Signal Processing & Software X 2016 (with O Gerek, Anadolu; B. Boashash, Queensland; M. Leszczuk, AGH; W. Armour, Oxford; and D. Wallom, Oxford)

[Computer Vision and Image Analysis in Plant Phenotyping](#) - Machine Vision and Applications 2015 (with H. Scharr, Juelich)

Conference organizing committee

2018

IEEE International Conference on Image Processing (ICIP 2018), Athens Greece,
Doctoral Symposium Chair

Workshop Organizer

2014– Present

[Simulation and Synthesis in Medical Imaging](#) - Medical Image Computing and Computer Assisted Interventions (MICCAI) 2016

[Simulation and Synthesis in Medical Imaging](#) – MICCAI 2017

[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

[Computer Vision Problems in Plant Phenotyping](#) – International Conference Computer Vision (ICCV) 2017

[Computer Vision Problems in Plant Phenotyping](#) – British Machine Vision Conference (BMVC) 2018

[Computer Vision Problems in Plant Phenotyping](#) – IEEE Computer Vision and Pattern Recognition Conference (CVPR) 2019

Conference Area Chair

2015– Present

Medical Image Computing and Computer Assisted Interventions (MICCAI) 2018, Granada, Spain

IEEE International Conference on Multimedia and Expo (ICME 2018), San Diego USA

International Conference on Computer Vision (ICCV 2017), Venice, Italy

19th International Conference on Image Analysis and Processing (ICIAP 2017), Italy

IEEE Multimedia Signal Processing Workshop (MMSP 2016), Canada

IEEE International Conference on Visual Communications and Image Processing (VCIP 2015), Singapore

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
- MICCAI; 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 AND UNIVERSITY SERVICE**TEACHING (Undergraduate; Graduate)**

- **University of Edinburgh (UK):**
 - Lecturer**, Machine Learning in Signal Processing (PGEE11175) – MSc Winter 2019
 - Lecturer**, Electromagnetics, Signals & Communication Systems 3 (ELEE09028) – UG Winter 2018/2019
 - Lecturer**, Advanced Concepts in Signal Processing (PGEE11020) – MSc Winter 2017/2018
 - Lecturer**, Signals & Communication Systems 3 (ELEE09027) – UG Winter 2016/2017
- **IMT Institute for Advanced Studies (Italy):**
 - Coordinator**, 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
- **University of Pavia:**
 - Visiting Lecturer**, Remote Sensing in Agriculture – G (MSc level) 2015-present

UNIVERSITY SERVICE

- Board Member, MSc and Undergraduate study boards** Jan 2016 – Present
University of Edinburgh, School of Engineering, UK
- Committee Member, Research Data Service steering group** June 2017 – Present
University of Edinburgh, School of Engineering, UK
- Committee Member, Computing Committee** September 2012 – Sept 2011
IMT Institute for Advanced Studies Lucca, Italy
- Committee Member, Faculty Council** January 2012 – Sept 2011
IMT Institute for Advanced Studies Lucca, Italy
- Committee Member, Academic Council** September 2011 – Sept 2011
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

SUPERVISION OF STAFF AND STUDENTS**PhD supervisor** (unless otherwise noted I had the sole role)

1. G. Jacenkow (UoE PhD,-), Deep learning for clinical decision support ^A [funded by Canon Medical]
2. X. Tian (UoE PhD,-), Pseudo healthy synthesis as a latent variable
3. A. Chartsias (UoE PhD,-), Multimodal cardiac segmentation
4. A. Dobrescu (UoE PhD,-), Multimodal machine learning for phenotyping
5. F. Mallik (UoE PhD,-), Learning with noisy annotations
6. V. Giuffrida (IMT PhD, viva Dec 2018), Invariant image representations (now University of Edinburgh)
7. I. Oksuz (IMT PhD, Dec 2017), Cardiovascular BOLD MRI joint myocardial segmentation and registration (now King's College London, UK)
8. M. Minervini (IMT PhD, PhD 2015), Affordable sensing and application-aware compression (now entrepreneur)
9. Z. Chen (NU PhD, 2014), Surveillance aware video transmission ^B (now Google)
10. E. Soyak (NU PhD, 2011), Surveillance aware video compression ^B (now CEO LifeMote)
11. F. Yang (NU PhD, 2011), Surveillance analytics and mining ^B (now Amazon)

Co-supervision: **A** Dr Luz, Usher Informatics at The University of Edinburgh; **B** Prof. Katsaggelos at Northwestern University (NU);

Postdoctoral Research Associate (Line Manager)

1. N. Dionelis (PhD Imperial College 2019), Deep Generative Models for Anomaly Detection (ongoing)
2. V. Giuffrida (PhD IMT viva Dec 2018), Deep learning in computer vision (ongoing)
3. T. Joyce (PhD UoE 2016), Deep learning in cardiac MRI (now PostDoc at ETH Zurich)
4. M. Minervini (PhD IMT 2016), Joint classification and data compression (now Entrepreneur)
5. A. Mukhopadhyay (PhD USA 2014), Cardiac MR segmentation (now Junior Research Group Leader, TU Darmstadt, Germany)
6. M. Bevilacqua (PhD France 2014), Ischemia detection with dictionary learning (now Univ. of Bordeaux, France)
7. C. Rusu (PhD Romania 2012), shift-invariant dictionary learning (now Lecturer, National University Ireland)

MSc, BSc, and Interns

1. H. Chen (UoE BEng,-), *BEng*, Link completion in graphs with deep learning (ongoing)
2. A. Laurynovich (UoE BEng, 2018), *BEng*, Camera Sensors for Internet of Things (now MSc at U. Essex)
3. F. Chen (UoE MSc, 2017), *MSc*, Crowdsourcing in plant leaf counting [best dissertation award] (now PhD student at Nottingham)
4. X. Tian (UoE MSc, 2017), *MSc*, Compression invariant feature learning [IDCOM scholarship winner] (now PhD student at Edinburgh)
5. M. Chai (UoE MSc, 2017), *MSc*, Learning to detect rare events
6. S. He (UoE MSc, 2016), *MSc*, Active learning in object counting (now PhD student at Exeter)
7. R. Pei (UoE MSc, 2016), *MSc*, Segmentation of pathology in images from cardiac MRI
8. L. Song (UoE MSc, 2016), *MSc*, Joint compression and classification
9. M. Damiano (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (structural)^B (now Engineer TBS GB Telematic and Biomedical Services Ltd)
10. L. Dodero (IIT, 2012), *Internship*, Image analysis for small animal brain MRI (DTI)^B (now Esaote, Genova)
11. K. Hayashi (NU BSc, 2011), *Undergraduate project*, Painting restoration and Illumination correction (now TapSense)
12. B. Cheng (NU BSc, 2011), *Undergraduate project*, DNA thermodynamics (now PepsiCo)
13. D. Babacan (NU MSc, 2009), *Project*, Surveillance analytics and object tracking ^A (now CTO LifeMote)
14. E. Maani (NU MSc, 2009), *Project*, Video Fingerprinting ^A (now Apple)
15. M. Luessi (NU MSc, 2008), *Thesis*, Video Up-rate Conversion ^A (now CEO BrainFPV)
16. R. Chin (NU BSc, 2008), *Undergraduate project*, Cardiac MR image registration (now Abbott Medical)
17. A. Targowska (NU BSc, 2008), *Undergraduate project*, Painting Restoration ^A (now McAndrews, Held & Malloy, Ltd)
18. A. Schlegel (NU-HSR, 2007), *diploma thesis*, Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking ^A
19. V. Andermatt (NU-HSR, 2007), *diploma thesis*, Visiting scholar from HSR-Rapperswil Switzerland, Cine Cardiac MRI segmentation and tracking ^A
20. D. Shiel (NU MSc, 2007), *Thesis*, AV Speech Recognition with Active Contour ^A (now Verizon)
21. R. Ahuja (NU MSc, 2006), *Thesis*, DNA Microarray Image Analysis ^A (now CTO ZypMedia)

Co-supervision: **A** With Prof. Katsaggelos at Northwestern University (NU); **B** With Dr. Gozzi at Istituto Italiano di Tecnologia (IIT)

MEMBERSHIP IN PROFESSIONAL BODIES

Italian Chapter of IAPR: Italian Association for Pattern Recognition	<i>September 2012– Present</i>
SCMR: Society for Cardiovascular Magnetic Resonance	<i>December 2010 – Present</i>
ISMRM: International Society for Magnetic Resonance in Medicine	<i>February 2008 – Present</i>
IEEE Senior Member (2018): Institute of Electrical and Electronic Engineers	<i>July 2002 – Present</i>
Chartered Engineering in Greece (Technical Chamber of Greece)	<i>November 2000 – 2011</i>
Hellenic Association of Mechanical & Electrical Engineers	<i>November 2000 – 2011</i>

CONFERENCE TALKS AND INVITED PRESENTATIONS (SELECTED)

Invited Keynotes and Conference Presentations

1. “Simulation and Synthesis” an International Conference on Acoustics Speech and Signal Processing (ICASSP) 2019 Tutorial, May 2019.
2. “Machine learning in phenotyping: doing more with less”, Keynote, Gatersleben Scientific Conference 2019, Gatersleben, Germany, Mar 2019.
3. “Joint motion compensation and myocardial segmentation with shallow and deep models”, Invited, SCMR/ISMRM workshop on The Emerging Role of Machine Learning in Cardiovascular Magnetic Resonance Imaging, Seattle, USA, Feb 2019.
4. “Multimodal deep learning in biomedical image analysis”, Keynote, International Conference on Artificial Neural Networks, Rhodes, Greece, Oct 2018,
5. “Deep (machine) learning in phenotyping”, Keynote, Phenome 2018, Arizona, USA, Feb 2018.
6. “Machine learning can empower trait extraction in affordable phenotyping”, Invited, IPPN Affordable Phenotyping Workshop, Jülich, Germany, May 2017.
7. “Computer Vision and Plant Phenotyping -a match made in heaven”, Keynote at British Machine Vision Association (BMVA) technical meeting on: Plants in Computer Vision, Nov. 2016.
8. “Easy Plant Phenomics,” Invited Scientific support to agriculture: competitiveness, quality and sustainability, European Commission, Joint Research Center, Athens, Greece, April 2014.
9. “DNA-Based Digital Signal Processing and its Application to Engineering Problems,” Plenary, *First International Meeting on Applications of DNA Computing to Engineering Problems*, Meiji University, Tokyo, Japan, Sept. 2005.

Invited Seminar Presentations

10. “Learning to synthesize signals and images,” Bristol Vision Institute, 17 Nov 2017, Host: Prof. Bull.
11. “Phenotyping, computer vision, and sensing -a match made in heaven”, Queen Mary University London, Host: Prof. Cavallaro, Nov. 2016.
12. “Affordable imaging of plants and trait analysis with Phenotiki”, Science and Advice for Scottish Agriculture (SASA), Host: Prof. Sadler, June 2016.
13. “Towards automated pixel-wise detection and visualization of area at risk at rest without contrast agents using cardiac BOLD MRI”, Cedars Sinai Medical Center, Host: Dharmakumar, Jan 2016.
14. “Personalized ‘needle-free’ imaging for cardiac MRI,” Yale University, Host: Prof. Papademetris, Jan 2016.
15. “Affordable plant phenotyping: the challenges and opportunities,” The University of Nottingham, Host: Prof. Pridmore, Nov. 2015.
16. “Personalized ‘needle-free’ imaging for cardiac MRI,” Univ. of Sheffield, Host: Prof. Frangi, Nov. 2015.
17. “‘Needle free’ ischemia assessment with cardiac BOLD MRI,” Queens Medical Research Institute (Edinburgh), Host: Dr Semple, Nov. 2015.
18. “Computer Vision and Phenotyping-A Match Made in Heaven”, Italian Institute of Technology, Host: Prof. Murino, June 2015.
19. “Towards personalized ‘one button imaging’ for cardiac MRI,” The University of Edinburgh, Host: Dr. Safari, June 2015.
20. “Affordable plant phenotyping: the challenges and opportunities,” Juelich, Host: Dr. Scharr, Dec. 2014.
21. “Affordable Plant Phenotyping,” ENEA C.R. Casaccia UTAGRI - Green Biotechnologies Laboratory, Host: Dr. Giuliano, April 2013.
22. “Imaging-based phenotyping for life sciences,” Dip. di Ingegneria dell'Informazione Università di Siena, Host: Prof. Gori, March 2012.
23. “Intelligent Video Compression for Tracking Applications,” Dip. di Elettronica - Politecnico di Torino, Host: Prof. Magli, June 2010.

24. "Research in the intersection of signal processing and life sciences: From DNA and AFM, to MRI and back," *University of Pennsylvania*, Dept. of Radiology, Host: Prof. Davatzikos, July 2008.
25. "Digital Signal Processing and Life Sciences: A Multiview Perspective," *University of Chicago*, Dept. of Ecology and Evolution, Host: Prof. Borevitz, April 2008.
26. "The Molecular and Organic Future of Digital Signal Processing," *University of Illinois at Chicago*, Dept. of Electrical and Computer Engineering, Host: Dr. Schonfeld, Oct 2007.
27. "Simulations of DNA based storage of digital signals," *University of Tokyo*, Japan, Host: Prof. Suyama, Sept 2005.
28. "The Molecular Future of Digital Signal Processing":
 - 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.
29. "DNA-Based Digital Signal Processing: Theory and Applications," *1st Kellogg Nanobusiness Conference: Exploring Opportunities in Nanobusiness*, Evanston, IL, USA, April 2004.
30. "DNA Computing: Applications in DSP, Security and Biotechnology," *Integrated Genomics*, Chicago, IL, Host: Dr. Kyrpides, March 2004.

SOFTWARE AND DATASETS

- **Factorised learning:** code for learning factorised representations in biomedical data https://github.com/agis85/spatial_factorisation
- **Pheno-Deep-Counter:** A deep learning based multi-instance multimodal object counter <https://bitbucket.org/tuttoweb/pheno-deep-counter>
- **Multimodal Brain Synthesis:** Tensorflow implementations of several of our papers on synthesis https://github.com/agis85/multimodal_brain_synthesis
- **Restricted Boltzmann Machine Matlab Toolbox:** A toolbox implementing various forms of RBMs <https://bitbucket.org/teamrbm/rbm>
- **Phenotiki:** Open source open hardware platform for affordable plant phenotyping <http://phenotiki.com>, as of now has been downloaded by 100 users and is actively used by 30 labs in the world
- **The PRL – CVPPP dataset:** A collection of annotated data for computer vision research in plant phenotyping <https://www.plant-phenotyping.org/datasets>, as of now it has been downloaded 2000 times, and cited 54 times.
- **Circulant Dictionary Learning:** An explicit formulation to shift invariant dictionary learning in MATLAB, till Sept 2016, the software was used by 40 researchers.
- **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.

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*, (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

List of 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.

Each paper contains in brackets the following **[IF: XX; yyC]** where XX denotes impact factor (2017) when available and yyC denotes current number of citations as reported by [Google Scholar](#), when available.

Refereed International Journals

1. A. Chartsias, T. Joyce, G. Papanastasiou, S. Semple, M. Williams, D. Newby, R. Dharmakumar, S.A. Tsaftaris, "Factorised Representation Learning in Cardiac Image Analysis," submitted, [\[preprint\]](#).
2. T. Bontpart, C. Concha, M.V. Giuffrida, I. Robertson, K. Admkie, T. Degefu, N. Girma, K. Tesfaye, T. Haileselassie, A. Fikre, M. Fetene, S.A. Tsaftaris, P. Doerner, "Affordable and robust phenotyping framework to analyse root system architecture of soil-grown plants," submitted, [\[preprint\]](#)
3. S.A Tsaftaris, H. Scharr, "Sharing the Right Data Right: A Symbiosis with Machine Learning," *Trends in Plant Science*, vol. 24, no. 2, pp 99-102, Feb 2019. [\[Full text\]](#) [IF: 12.15] [\[Website\]](#)
4. M.V. Giuffrida, P. Doerner, S.A. Tsaftaris, "Pheno-Deep Counter: a unified and versatile deep learning architecture for leaf counting," *The Plant Journal*, In Press. 2018 [\[Full text\]](#)[\[PDF\]](#) [\[Source Code\]](#) [IF: 5.9]
5. (editorial) A. Frangi, S.A. Tsaftaris, J. Prince, "Simulation and Synthesis in Medical Imaging," *IEEE Trans. on Medical Imaging*, vol. 37, no. 3, pp. 673-679, March 2018. [\[Full text\]](#) [IF: 3.94; 1C]
6. (editorial) Ö.N. Gerek, B. Boashash, M. Leszczuk, S.A. Tsaftaris, W. Armour, D. Wallom, "Editorial for Special Issue on Reproducible Research," *Digital Signal Processing*, vol. 77, pp 1-4, June 2018. [\[Full text\]](#) [IF 2.241]
7. I. Oksuz, A. Mukhopadhyay, R. Dharmakumar and S. A. Tsaftaris, "Unsupervised Myocardial Segmentation for Cardiac BOLD," in *IEEE Trans on Medical Imaging*, vol. 36, no. 11, pp. 2228-38, Nov. 2017. [\[Full text\]](#)[\[PDF\]](#) [IF: 3.94]
8. A. Chartsias, T. Joyce, V. Giuffrida, and S.A. Tsaftaris, "Multimodal MR Synthesis via Modality-Invariant Latent Representation," *IEEE Trans on Medical Imaging*, vol. 37, no. 3, pp. 803-814, Mar. 2018. [\[Full text\]](#) [\[PDF\]](#) [\[Source code\]](#) [IF: 3.94; 12C]
9. V. Giuffrida, F. Chen, H. Scharr, S.A. Tsaftaris, "Citizen crowds and experts: observer variability in image-based plant phenotyping," *Plant Methods*, Feb. 2018, vol. 14, no. 12. [\[PDF\]](#) [\[Zooniverse site\]](#) [IF:3.5; 2C]
10. A. Suinesiaputra, P. Ablin, X. Alba, M. Alessandrini, J. Allen, W. Bai, S. Cimen, P. Claes, B. Cowan, J. D'hooge, N. Duchateau, J. Ehrhardt, A. Frangi, A. Gooya, V. Grau, K. Lekadir, A. Lu, A. Mukhopadhyay, I. Oksuz, N. Parajuli, X. Pennec, M. Pereanez, C. Pinto, P. Piras, M.-M. Rohe, D. Rueckert, D. Saring, M. Sermesant, K. Siddiqi, M. Tabassian, L. Teresi, S. Tsaftaris, M. Wilms, A. Young, X. Zhang and P. Medrano-Gracia, "Statistical shape modeling of the left ventricle: myocardial infarct classification challenge", *IEEE Journal of Biomedical and Health Informatics*. 2017 [\[Full text\]](#) [IF: 3.45; 9C]
11. H-J Yang, D. Dey, J. Sykes, M. Klein, J. Butler, M. Kovacs, O. Sobczyk, B. Sharif, X. Bi, A. Kali, I. Cokic, R. Tang, R. Yumul, A. Conte, S.A Tsaftaris, M. Tighiouart, D. Li, P. Slomka, D. Berman, F. Prato, J. Fisher, R. Dharmakumar, "Arterial CO2 as a Potent Coronary Vasodilator: A Preclinical PET/MR Validation Study with Implications for Cardiac Stress Testing," *Journal of Nuclear Medicine*. 2017 [\[Full text\]](#) [IF: 6.64; 1C]
12. M. Minervini, V. Giuffrida, P. Perata, S.A. Tsaftaris, "Phenotiki: An open software and hardware platform for affordable and easy image-based phenotyping of rosette-shaped plants," *The Plant Journal*, vol. 90, no. 1, pp. 204-16, April 2017. [\[Full text\]](#) [IF: 5.9; 20C]
13. S.A. Tsaftaris, M. Minervini, H. Scharr, "Machine Learning for Plant Phenotyping Needs Image Processing," *Trends in Plant Science*, vol 21, no. 12, pp.989-91, Dec. 2016. [\[PDF\]](#)[\[Full text\]](#) [IF: 11.9; 19C]
14. (editorial) H. Scharr, H. Dee, A.P. French, S.A. Tsaftaris, "Special issue on computer vision and image analysis in plant phenotyping," *Machine Vision and Applications*, 2016, vol. 27, no. 5, pp. 607-9. [\[Full text\]](#) [IF: 2.00; 5C]
15. M. Pagani, M. Damiano, S.A. Tsaftaris, 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. [\[PDF\]](#) [\[Full text\]](#) [IF: 2.55; 12C]
16. 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. [\[PDF\]](#) [\[Full text\]](#) [IF: 3.13; 4C]
17. 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. [\[PDF\]](#) [\[Full text\]](#) [IF: 3.94; 8C]

18. 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*, vol. 27, pp 585-606, May 2016. [[PDF](#)] [[Full text](#)] [IF: 2.00; 54C]
19. M. Minervini, A. Fischbach, H. Scharr, S. A. Tsaftaris, "Finely-grained annotated datasets for image-based plant phenotyping", *Pattern Recognition Letters*, vol. 81, no. 1, pp 80-89, October 2016. [[PDF](#)] [[Full text](#)] [[website](#)] [IF: 1.99; 1500 downloads; 47C]
20. 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, 2015. [[Full text](#)] [[PDF](#)] [IF: 2.12; 5C]
21. 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](#)] [IF: 9.65; 56C]
22. 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](#)] [IF: 3.94; 8C]
23. (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](#)] [IF: 2.00; 7C]
24. 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](#)] [IF: 8.28; 30C]
25. 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, 2013. [[Full Text](#)] [IF: 3.07; 63C]
26. 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](#)] [IF: 2.52; 24C]
27. 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](#)] [IF: 3.07; 16C]
28. V. Tucci, T. Kleefstra, A. Hardy, I. Heise, S. Maggi, M. Willemsen, H. Hilton, C. Esapa, M. Simon, M.-T. Buenavista, L. Vizor, L. Doderio, 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. Nieuws, 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](#)] [IF: 12.78; 56C]
29. 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](#)] [IF: 7.29; 9C]
30. 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," *Int. Journal of High Performance Computing Applications*, Jan 17, 2014. [[Full text](#)] [[PDF](#)] [IF: 2.09; 11C]
31. 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](#)] [IF: 2.02; 66C]
32. 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](#)] [IF: 3.72; 4C]
33. 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](#)] [IF: 6.8; 22C]
34. 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](#)] [IF: 6.8; 42C]
35. 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*, vol. 59, no. 3, p.125-135, 2014. [[PDF](#)] [IF: 0.57; 5C]
36. 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](#)]
37. 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](#)] [IF: 3.08; 13C]

38. E. Soyak, S.A. Tsiftaris, 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](#)] [[PDF](#)] [IF: 3.59]
39. S.A. Tsiftaris, 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](#)] [IF: 9.65; 4C]
40. F. Jiang, J. Yuan, S.A. Tsiftaris, 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](#)] [IF: 2.49; 153C]
41. X. Zhou, V. Rundell, Y. Liu, R. Tang, R. Klein, S. Shah, S. Zuehlisdrorf, S.A. Tsiftaris, 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](#)] [IF: 3.08; 4C]
42. X. Zhou, S. A. Tsiftaris, Y. Liu, R. Tang, R. Klein, S. Zuehlisdrorf, D. Li, R. Dharmakumar, "Artifact-reduced two-dimensional cine steady state free precession for myocardial blood-oxygen-level-dependent imaging," *J. of Magnetic Resonance Imaging*, vol. 31, no. 4, pp. 863-871, 2010. [[Full text](#)] [IF: 3.08; 12C]
43. S.A. Tsiftaris, E. Offerman, R. Edelman, I. Koktzoglou, "Fully Automated Reconstruction of Ungated Ghost Magnetic Resonance Angiograms Using Cluster Analysis", *J. of Magnetic Resonance Imaging*, vol. 31, no. 3, pp. 655-662, 2010. [[Full text](#)] [IF: 3.08; 2C]
44. R. Dharmakumar, Z. Zhang, I. Koktzoglou, S.A. Tsiftaris, D. Li, "Dual Contrast Cellular MRI," *Molecular Imaging*, vol. 8, no. 5, pp. 254-63, 2009. [[Full text](#)] [IF: 1.47; 3C]
45. S.A. Tsiftaris, 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](#)] [IF: 2.77; 6C]
46. (invited) S.A. Tsiftaris, 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](#)] [IF: 9.23; 1C]
47. (invited) S.A. Tsiftaris, 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](#)] [5C]
48. H. Wang, S.A. Tsiftaris, 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. 2158-69, 2006. [[PDF](#)] [IF: 4.82; 30C]
49. S.A. Tsiftaris, T.N. Pappas, E.T. Papoutsakis, A.K. Katsaggelos, "How can DNA-Computing be applied to Digital Signal Processing?" *IEEE Signal Proc Mag*, vol. 21, no. 6, pp. 57-61, 2004. [[PDF](#)] [IF: 9.65; 38C]
50. S.A. Tsiftaris, 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](#)] [IF: 9.65; 21C]
51. D. Simitopoulos, S.A. Tsiftaris, N.V. Boulgouris, A. Briassoulis, M.G. Strintzis, "Fast watermarking of MPEG-1/2 streams using compressed-domain perceptual embedding and a generalized correlator detector," *EURASIP Journal on Applied Signal Proc*, vol. 8, pp. 1088-1106, 2004. [[PDF](#)] [IF: 1.96; 18C]

Editorials, Books and Book Chapters

52. R. Dharmakumar, S.A. Tsiftaris, H.-J. Yang, D. Li, "Cardiovascular Magnetic Resonance Assessment of Myocardial Oxygenation," Editor(s): Warren J. Manning, Dudley J. Pennell, Cardiovascular Magnetic Resonance (Third Edition), pp. Pages 84-96.e3, ISBN 9780323415613, Elsevier, 2019. [[Full text](#)]
53. H. Scharr, T. Pridmore, S.A. Tsiftaris, *Editorial: Computer Vision Problems in Plant Phenotyping, CVPPP 2017 -- Introduction to the CVPPP 2017 Workshop Papers*, The IEEE International Conference on Computer Vision (ICCV), 2017, pp. 2020-2021. [[link](#)]
54. S.A. Tsiftaris, A. Gooya, A. Frangi, J. Prince, *Simulation and Synthesis in Medical Imaging: First International Workshop, SASHIMI 2017, Held in Conjunction with MICCAI 2017, Quebec City, September 10, 2017, Proceedings*. Lecture Notes in Computer Science, vol. 10557, Springer. 2017. [[link](#)]
55. S.A. Tsiftaris, A. Gooya, A. Frangi, J. Prince, *Simulation and Synthesis in Medical Imaging: First International Workshop, SASHIMI 2016, Held in Conjunction with MICCAI 2016, Athens, Greece, October 21, 2016, Proceedings*. Lecture Notes in Computer Science, vol. 9968, Springer. 2016. [[link](#)]
56. M. Minervini, C. Rusu, S. A. Tsiftaris, "Computationally efficient data and application driven color transforms for the compression and enhancement of images and video", in *Color Image and Video Enhancement*. Springer, 2015, ch. 12. [[PDF](#)]
57. S.A. Tsiftaris, F. Casadio, G. Gautier, J.-L. Andral, A.K. Katsaggelos, "La Joie De Vivre: The Evolution of a Masterpiece," in *Picasso Express*, J.-L. Andral (ed.), May 2011.
58. S.A. Tsiftaris, A.K. Katsaggelos, "contribution to *Matisse: Radical Invention, 1913 - 1917*," exhibit catalogue, S. D'Alessandro and J. Elderfield (eds), Art Institute of Chicago, Chicago, IL, April 27, 2010.
59. S.A. Tsiftaris, A.K. Katsaggelos, "DNA sequencing," in *Wiley Encyclopedia of Medical Devices and Instrumentation*, 2nd ed., J. G. Webster, Ed. Reading, Massachusetts: John Wiley and Sons, 2006, vol. 2, pp. 427-437.

60. D. Simitopoulos, S.A. Tsaftaris, N.V. Boulgouris, G.A. Triantafyllidis, M.G. Strintzis: “*Digital Watermarking for the Copyright Protection of Compressed Video*”, “Intelligent Integrated Media Communication Techniques”, J. Tasic, M. Ansorge, M. Najim eds, Kluwer Academic Pub, 2003.

Patents

61. R. Dharmakumar, D. Li, S.A. Tsaftaris, “Assessment of coronary heart disease with carbon dioxide,” World Wide Patent, US 20140088406 A1, granted Nov 8 2012. [\[description\]](#)

Theses

62. S.A. Tsaftaris, “DNA-Based Storage and Retrieval of Digital Signals,” PhD Dissertation, Northwestern University, Department of Electrical Engineering and Computer Science, June 2006.
63. S.A. Tsaftaris, “DNA-Based Digital Signal Processing,” MSc Thesis, Northwestern University, Department of Electrical and Computer Engineering, May 2003.
64. S.A. Tsaftaris, “Copyright Protection of MPEG 1 & 2 Video Sequences Using Digital Watermarking Techniques,” Diploma Thesis in Greek, Aristotle Univ. of Thessaloniki, Dept. of Electrical & Computer Engineering, June 2000.

Refereed Conference Proceedings and Abstracts

65. T. Xia, A. Chartsias, S.A. Tsaftaris, “Adversarial Pseudo Healthy Synthesis Needs Pathology Factorization”, Medical imaging with Deep Learning (MIDL) 2019, accepted. [\[PDF\]](#)
66. A. Chartsias, T. Joyce, G. Papanastasiou, S. Semple, M. Williams, D. Newby, R. Dharmakumar, S.A. Tsaftaris, “Doing more with less: semi-supervised cardiac segmentation with a fraction of labeled images,” Meeting of the Society of Cardiovascular Magnetic Resonance 2019 (**A. Chartsias shortlisted for Early Career Award of SCMR**)
67. A. Chartsias, T. Joyce, G. Papanastasiou, S. Semple, M. Williams, D. Newby, R. Dharmakumar, S.A. Tsaftaris, ‘Factorised spatial representation learning: application in semi-supervised myocardial segmentation,’ in *MICCAI*, Sept. 2018. [\[PDF\]](#) [\[Source code\]](#)
68. T. Joyce, A. Chartsias, S.A. Tsaftaris, ‘Deep Multi-Class Segmentation Without Ground-Truth Labels,’ MIDL 2017, Medical Imaging with Deep Learning, 1st International Conference, Amsterdam, The Netherlands, July 4-6, 2018. [\[PDF\]](#)
69. H. Chen, M.V. Giuffrida, P. Doerner, S.A. Tsaftaris, ‘Root Gap Correction with a Deep Inpainting Model,’ Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP), A BMVC workshop, Sep 2018. [\[PDF\]](#)
70. T. Joyce, A. Chartsias, and S.A. Tsaftaris, “Robust Multi-Modal MR Image Synthesis,” MICCAI, Quebec City, Canada, 2017 [\[PDF\]](#) [1C]
71. A. Chartsias, T. Joyce, R. Dharmakumar, S.A. Tsaftaris, “Adversarial Image Synthesis for Unpaired Multi-Modal Cardiac Data,” SASHIMI 2017, Simulation and Synthesis in Medical Imaging, Second International Workshop, Held in Conjunction with MICCAI 2017, Quebec City, Canada, Sept. 10, 2017. [\[PDF\]](#)
72. I. Oksuz, R. Dharmakumar, S.A. Tsaftaris, ‘Joint Myocardial Registration and Segmentation of Cardiac BOLD MRI’, STACOM 2017 (A MICCAI 2017 Workshop). [\[PDF\]](#) (**Best paper award**).
73. A. Dobrescu, M.V. Giuffrida, S.A. Tsaftaris, “Leveraging multiple datasets for deep leaf counting,” Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP), An ICCV workshop, Oct 2017. [\[PDF\]](#)
74. M.V. Giuffrida, H. Scharr, S.A. Tsaftaris, “ARIGAN: Synthetic Arabidopsis Plants using Generative Adversarial Network,” Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP), An ICCV workshop, Oct 2017. [\[PDF\]](#)
75. M.V. Giuffrida, and S.A. Tsaftaris, “Theta-RBM: Unfactored Gated Restricted Boltzmann Machine for Rotation-Invariant Representations”, arXiv preprint arXiv:1606.08805, 2016 [\[PDF\]](#) [1C]
76. V. Sevetlidis, M.V. Giuffrida, and S.A. Tsaftaris, “Whole image synthesis using a deep encoder-decoder network,” *Simulation and Synthesis in Medical Imaging MICCAI Workshop*, Athens, 2016. [7C]
77. M.V. Giuffrida, and S.A. Tsaftaris, “Rotation-invariant restricted Boltzmann machine using shared gradient filters,” *25th International Conference on Artificial Neural Networks (ICANN)*, Barcelona 2016. [\[PDF\]](#)
78. M. Minervini, S. A. Tsaftaris, “Classification-aware distortion metric for HEVC intra coding,” *International Conference on Visual Communications and Image Processing*, Singapore, 2015. [\[PDF\]](#)
79. I. Oksuz, A. Mukhopadhyay, M. Bevilacqua, R. Dharmakumar, S.A. Tsaftaris, “Dictionary Learning Based Image Descriptor for Myocardial Registration of CP BOLD MR”, *MICCAI*, Munich 2015, Lecture Notes in Computer Science, vol. 9350, pp 205-213. [\[PDF\]](#) [\[Full text\]](#) [2C]
80. A. Mukhopadhyay, I. Oksuz, M. Bevilacqua, R. Dharmakumar, S.A. Tsaftaris, “Unsupervised myocardial segmentation for cardiac MRI”, *MICCAI*, Munich 2015, Lecture Notes in Computer Science, vol. 9350, pp 12-20. [\[PDF\]](#) [\[Full text\]](#) [4C]

81. A. Mukhopadhyay, I. Oksuz, S.A. Tsaftaris, "Supervised Learning of Functional Maps for Infarct Classification", *Statistical Atlases and Computational Models of the Heart, Imaging and Modelling Challenges*, 6th International Workshop, STACOM 2015, Held in Conjunction with MICCAI 2015, Munich, Germany, October 9, 2015, *Lecture Notes in Computer Science*, vol. 9534, pp 162-170, 2015. [[PDF](#)] [[Full text](#)]
82. M.V. Giuffrida, M. Minervini, S.A. Tsaftaris, "Learning to Count Leaves in Rosette Plants," In S. A. Tsaftaris, H. Scharr, and T. Pridmore, editors, *Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP)*, pages 1.1-1.13. BMVA Press, September 2015. [[PDF](#)] [25C]
83. M. Minervini, M.V. Giuffrida, S.A. Tsaftaris, "An interactive tool for semi-automated leaf annotation," In S. A. Tsaftaris, H. Scharr, and T. Pridmore, editors, *Proceedings of the Computer Vision Problems in Plant Phenotyping (CVPPP)*, pages 6.1-6.13. BMVA Press, September 2015. [[PDF](#)] [7C]
84. A. Mukhopadhyay, I. Oksuz, M. Bevilacqua, R. Dharmakumar, S.A. Tsaftaris, "Data-Driven Feature Learning for Myocardial Segmentation of CP-BOLD MRI", *8th International Conference on Functional Imaging and Modeling of the Heart (FIMH 2015)*, Maastricht, H. van Assen et al. (Eds.): FIMH 2015, LNCS 9126, pp. 189–197, 2015. [[Full text](#)] [[PDF](#)] [7C]
85. I. Oksuz, A. Mukhopadhyay, M. Bevilacqua, H.-J. Yang, R. Dharmakumar, S.A. Tsaftaris, "Effect of BOLD Contrast on Myocardial Registration", *ISMRM 2015*, Toronto.
86. A. Mukhopadhyay, M. Bevilacqua, I. Oksuz, R. Dharmakumar, S.A. Tsaftaris, "Data Driven Feature Learning For Representation of Myocardial BOLD MR Images", *ISMRM 2015*, Toronto.
87. M. Bevilacqua, A. Mukhopadhyay, I. Oksuz, C. Rusu, R. Dharmakumar, S.A. Tsaftaris, "Dictionary-based Support Vector Machines for Unsupervised Ischemia Detection at Rest with CP-BOLD Cardiac MRI", *ISMRM 2015*, Toronto.
88. R.B. Uriarte, S. Tsaftaris, F. Tiezzi, "Service Clustering for Autonomic Clouds Using Random Forest," *2015 15th IEEE/ACM International Symposium in Cluster, Cloud and Grid Computing (CCGrid)*, pp.515-524, 4-7 May 2015. [[Full text](#)] [14C]
89. M. Minervini, C. Rusu, S.A. Tsaftaris, "Unsupervised and Supervised Approaches to Color Space Transformation for Image Coding," *IEEE International Conference on Image Processing (ICIP)*, Paris, France, 2014. [[PDF](#)] [4C]
90. C. Rusu, S.A. Tsaftaris, "Structured Dictionaries for Ischemia Estimation in Cardiac BOLD MRI at Rest," *MICCAI*, Boston 2014. 2014;17(Pt 2):562-9. PMID: 25485424 [[Full text](#)] [[PDF](#)] [2C]
91. C. Rusu, R. Dharmakumar, S.A. Tsaftaris, "A Synthetic Generator of Myocardial Blood-Oxygen-Level-Dependent MRI Timeseries with Structural Sparse Decomposition Modeling," *ISMRM*, Milan Italy 2014.
92. D. Boschetto, C. Rusu, R. Dharmakumar, S.A. Tsaftaris, "Temporal and Spatial Variation of Baseline Myocardial BOLD Signal Intensity in Cardiac Phase-Resolved BOLD MRI: A Potentially Revealing Insight into Dynamic Changes in Myocardial Oxygenation," *ISMRM*, Milan Italy 2014.
93. R. Morisi, R. Dharmakumar, S.A. Tsaftaris, "Unsupervised Ischemia Detection at Rest with CP-BOLD Cardiac MRI: A Simulation Study Employing Independent Component Analysis," *ISMRM*, Milan Italy 2014. (**Magna Cum Laude Award**)
94. H. Yang, R. Yumul, R.L. Tang, I. Cokic, M. Klein, A. Kali, O. Sobczyk, B. Sharif, J. Tang, X. Bi, S.A. Tsaftaris, D. Li, J. Min, D.S. Berman, A.H. Conte, J. Fisher, R. Dharmakumar, "Probing Myocardial Blood Oxygenation Reserve of Canines with Controlled Hypercapnia using T2-prepared BOLD CMR," *ISMRM*, Milan Italy 2014.
95. Cokic I, Kali A, Wang X, Yang H, Tang RL, Thajudeen A, Shehata M, Amorn AM, Liu E, Stewart B, Bennett N, Harlev D, S.A. Tsaftaris, Jackman WM, Chugh SS, Dharmakumar R. "Electrical Characteristics of Chronic Iron-Laden Myocardial Infarcts: Initial Study in Canine Hearts," *ISMRM*, Milan Italy 2014.
96. H. Yang, R. Yumul, R.L. Tang, I. Cokic, M. Klein, A. Kali, O. Sobczyk, B. Sharif, J. Tang, X. Bi, S.A. Tsaftaris, D. Li, J. Min, D.S. Berman, A.H. Conte, J. Fisher, R. Dharmakumar, "Assessment of Controlled Iso-Oxic Hypercapnic Stimulation of Myocardial Blood Flow using Oxygen Dependent Cardiac Magnetic Resonance Imaging," *American College of Cardiology Scientific Sessions 2014 (Washington D.C., USA)*.
97. Cokic I, Kali A, Yang H, Tang RL, S.A. Tsaftaris, Dharmakumar R. "Impact of Chronic Iron Deposition Following Myocardial Infarction on Gross Electrical Characteristics," *Heart Rhythm Society 35th Annual Scientific Sessions 2014 (San Francisco, USA)*.
98. H. Yang, R. Yumul, R.L. Tang, I. Cokic, M. Klein, A. Kali, O. Sobczyk, B. Sharif, J. Tang, X. Bi, S.A. Tsaftaris, D. Li, J. Min, D.S. Berman, A.H. Conte, J. Fisher, R. Dharmakumar, "Probing Myocardial Blood Oxygenation Reserve with Controlled Hypercapnia using BOLD CMR," *Journal of Cardiovascular Magnetic Resonance. 2013; 16(Suppl 1): O14 (SCMR 17th Annual Scientific Sessions, New Orleans, USA)*. [[Full text](#)]
99. M. Minervini, C. Rusu, S.A. Tsaftaris, "Learning Computationally Efficient Approximations of Complex Image Segmentation Metrics," *8th International Symposium on Image and Signal Processing and Analysis ISPA 2013 Trieste (Italy)*, September 4 - 6, 2013, pp. 60 - 65. [[Full text](#)] [5C]
100. C. Rusu, S.A. Tsaftaris, "Estimation of Scribble Placement for Painting Colorization," *8th International Symposium on Image and Signal Processing and Analysis ISPA 2013 Trieste (Italy)*, September 4 - 6, 2013, pp. 564 - 569. [[Full text](#)] [[PDF](#)] [4C]

101. [M. Minervini](#), S.A. Tsaftaris, "Application-Aware Image Compression for Low Cost and Distributed Plant Phenotyping," 18th International Conference on Digital Signal Processing (DSP), Santorini, Greece, 2013. [[Full text](#)] [[PDF](#)]
102. M.M. Abdelsamea, S.A. Tsaftaris, "Active Contour Model driven by Globally Signed Region Pressure Force," 18th International Conference on Digital Signal Processing (DSP), Santorini, Greece, 2013. [[Full text](#)] [[PDF](#)] [11C]
103. A. Kali, I. Cokic, A. Kumar, S.A. Tsaftaris, R. Tang, M. Friedrich, R. Dharmakumar "Acute Hemorrhagic Myocardial Infarction Leads to Localized Chronic Iron Deposition: A CMR Study," *ISMRM 21st Annual Meeting*, Salt Lake City, USA, 2013.
104. A. Kali, I. Cokic, A. Kumar, S.A. Tsaftaris, R. Tang, M. Friedrich, R. Dharmakumar "Acute Reperfusion Intramyocardial Hemorrhage Leads to Regional Chronic Iron Deposition in the Heart," *Journal of Cardiovascular Magnetic Resonance*. 2013; 15(Suppl 1): P174 (SCMR 16th Annual Scientific Sessions, San Francisco, USA) [[Full text](#)]
105. [L. Dodero](#), F. Sforazzini, A. Galbusera, [M. Damiano](#), S.A. Tsaftaris, 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," *2013 International Meeting for Autism Research*.
106. [M. Minervini](#), [M. Damiano](#), V. Tucci, A. Bifone, A. Gozzi, S.A. Tsaftaris, "Mouse Neuroimaging Phenotyping in the Cloud," *3rd International Conference on Image Processing Theory, Tools and Applications, Special Session on Special Session on High Performance Computing in Computer Vision Applications (HPC-CVA)*, Istanbul, Turkey, Oct 15-18, 2012. [[Full text](#)] [5C]
107. [Z. Chen](#), [E. Soyak](#), S.A. Tsaftaris, A. K. Katsaggelos, "Tracking-Optimal Error Control Schemes for H.264 Compressed Video for Vehicle Surveillance," *European Signal Processing Conference (EUSIPCO)*, Sept. 2012. [[Full text](#)] [2C]
108. A. Kali, A. Kumar, I. Cokic, R. Tang, S.A. Tsaftaris, M. Friedrich, and R Dharmakumar, "Chronic Iron Deposition following Acute Hemorrhagic Myocardial Infarction: A Cardiovascular Magnetic Resonance Study". *Circulation*. 2012; 126: A10912 (AHA Scientific Sessions, Los Angeles, USA). [[Full text](#)]
109. S.A. Tsaftaris, X. Zhou, R. Tang, J. Min, D. Li, R. Dharmakumar, "Detecting ACS and Identifying Acute Ischemic Territories with Cardiac Phase-Resolved BOLD MRI at Rest," *The 20th Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, Australia, 2012. (**Magna Cum Laude Award**)
110. S.A. Tsaftaris, X. Zhou, R. Tang, D. Li, R. Dharmakumar, "Detecting Myocardial Ischemic Territories in the Setting of Acute Coronary Obstructions at Rest with Cardiac Phase-Resolved Blood Oxygen Level Dependent (CP-BOLD) MRI," *American Heart Association Scientific Sessions 2011* [[Full text](#)]
111. S.A. Tsaftaris, "PHIDIAS: Plant Phenotyping with a High-throughput, Intelligent, Distributed, and Integrated Analysis System," *2nd International Plant Phenotyping Symposium*, Juelich, Germany, Sept. 5 -7, 2011.
112. [E. Soyak](#), S.A. Tsaftaris, A. K. Katsaggelos, "Tracking-Optimized Quantization for H.264 Compression in Transportation Video Surveillance Applications," *IEEE International Conference on Image Processing (ICIP 2011)*, Brussels, Belgium, Sept. 11-14, 2011. [[PDF](#)] [3C]
113. [E. Soyak](#), S.A. Tsaftaris, A. K. Katsaggelos, "Channel Protection for H.264 Compression in Transportation Video Surveillance Applications," *IEEE International Conference on Image Processing (ICIP 2011)*, Brussels, Belgium, Sept. 11-14, 2011. [[PDF](#)] [2C]
114. S.A. Tsaftaris, V. Rundell, X. Zhou, Y. Liu, R. Tang, D. Li, R. Dharmakumar, "Detecting Myocardial Ischemia at Rest with Cardiac Phase-Resolved BOLD MRI: Early Findings," *The 19th Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM)*, Montreal, Canada, 2011.
115. S.A. Tsaftaris, R. Tang, X. Zhou, D. Li, R. Dharmakumar, "An Area-based Imaging Biomarker for the Characterization of Coronary Artery Stenosis with Blood Oxygen-Sensitive MRI," *The 19th Meeting of the ISMRM*, Montreal, Canada, 2011.
116. S.A. Tsaftaris, X. Zhou, D. Li, R. Dharmakumar, "An Area-based Imaging Biomarker for Characterizing Coronary Artery Stenosis with Myocardial BOLD MRI," *Society for Cardiovascular Magnetic Resonance (SCMR)*, 2011, vol. 13 (Suppl 1) : O22, Feb. 2011. [[Full text](#)] (**Early Career Award finalist**)
117. S.A. Tsaftaris, X. Zhou, R. Dharmakumar, "A Fully Automated Statistical Method for Characterization of Flow Artifact Presence in cardiac MRI," *SCMR*, 2011, vol. 13 (Suppl 1): P45, Feb. 2011. [[Full text](#)]
118. [E. Soyak](#), S.A. Tsaftaris, A. K. Katsaggelos, "Tracking-Optimal Pre- and Post-processing for H.264 Compression in Traffic Video Surveillance Applications," *IEEE International Conference on Electronics Circuits and Systems (ICECS 2010)*, Athens, Greece, Dec. 12-15, 2010, pp. 380-383. [[PDF](#)]
119. [F. Jiang](#), J. Yuan, S.A. Tsaftaris, A.K. Katsaggelos, "Video Anomaly Detection in Spatiotemporal Context," *International Conference on Image Processing (ICIP)*, Hong Kong, Sept 26-29, 2010, pp. 705 - 708. [[PDF](#)] [20C]
120. [E. Soyak](#), S.A. Tsaftaris, A.K. Katsaggelos, "Quantization Optimized H.264 Encoding for Traffic Video Tracking Applications," *ICIP*, Hong Kong, Sept 26-29, 2010, pp. 1241 - 1244. [[PDF](#)] [4C]
121. [E. Soyak](#), S.A. Tsaftaris, A.K. Katsaggelos, "Content-Aware H.264 Encoding for Traffic Video Tracking Applications," *35th International Conference on Acoustics, Speech, and Signal Processing (ICASSP)* Dallas, TX, March 14 – 19, 2010, pp. 730 – 733. [[PDF](#)] [8C]

122. R. Dharmakumar, Z. Zhang, I. Koktzoglou, S.A. Tsaftaris, D. Li, "Dual Contrast Cellular MRI," *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
123. S.A. Tsaftaris, X. Zhou, D. Li, R. Dharmakumar, "A New Quantitative Imaging Biomarker for Identifying Critical Coronary Artery Stenosis with Myocardial BOLD MRI," *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
124. S.A. Tsaftaris, X. Zhou, R. Dharmakumar, "Automated Assessment of Ghost Artifacts in MRI," *18th meeting of the ISMRM*, Stockholm, Sweden, 2010.
125. S.A. Tsaftaris, E. Offerman, R. Edelman, I. Koktzoglou, "Unsupervised reconstruction for ungated ghost angiography by clustering of image features", *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
126. S.A. Tsaftaris, X. Zhou, R. Tang, R. Klein, A. Katsaggelos, and R. Dharmakumar, "Automated synchronization of cardiac phases for myocardial BOLD MRI", *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
127. S.A. Tsaftaris, X. Zhou, R. Tang, R. Dharmakumar, "Unsupervised and Reproducible Image-based Identification of Cardiac Phases in Cine SSFP MRI", *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
128. X. Zhou, S.A. Tsaftaris, Y. Liu, R. Tang, R. Klein, S. Zuehlsdorff, D. Li, R. Dharmakumar, "Myocardial BOLD imaging using flow compensated 2D cine bSSFP," *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
129. X. Zhou, V. Rundell, Y. Liu, R. Tang, R. Klein, S. Giri, S. Shah, S.A. Tsaftaris, S. Zuehlsdorff, O. Simonetti, D. Li, and R. Dharmakumar, "On the origin of myocardial edema contrast in T2-STIR images," *18th Meeting of the ISMRM*, Stockholm, Sweden, 2010.
130. S.A. Tsaftaris, X. Zhou, R. Tang, D. Li, R. Dharmakumar, "Automated detection and quantification of microcirculatory oxygenation changes in the heart," *SCMR*, vol. 12, Suppl 1, pp. P216+, 2010. [[Full text](#)]
131. X. Zhou, S.A. Tsaftaris, Y. Liu, R. Tang, R. Klein, S. Zuehlsdorff, D. Li, R. Dharmakumar, "Artifacts-reduced 2D cine SSFP with flow compensation for myocardial BOLD imaging," *SCMR*, vol. 12, Suppl 1, pp. P68+, 2010. [[Full text](#)]
132. X. Zhou, V. Rundell, Y. Liu, R. Tang, R. Klein, S. Giri, S. Shah, S.A. Tsaftaris, S. Zuehlsdorff, O. Simonetti, D. Li, R. Dharmakumar, "On the mechanism of myocardial edema contrast in T2-STIR images," *SCMR*, vol. 12, Suppl 1, pp. O19+, 2010. [[Full text](#)]
133. S.A. Tsaftaris, C. Noutsos, "Plant Phenotyping with Low Cost Digital Cameras and Image Analytics," in *Proceedings of the 4th International Symposium on Information Technologies in Environmental Engineering*, Thessaloniki, Greece, May 2009, Springer Berlin Heidelberg, pp. 238 – 251, 2009. [[PDF](#)] [30C]
134. S.A. Tsaftaris, X. Zhou, R. Tang, R. Klein, R. Dharmakumar, "An Intensity Based Statistical Approach for Left Ventricular Localization and Identification of End-Systolic and End-Diastolic Images from Cine Cardiac MRI," *17th Meeting of the ISMRM*, Hawaii, 2009.
135. S.A. Tsaftaris, R. Tang, R. Klein, D. Li, R. Dharmakumar, "Visualizing and Quantifying Myocardial Oxygenation Changes with Statistically Optimal Colormaps," *17th Meeting of the ISMRM*, Hawaii, 2009.
136. R. Dharmakumar, I. Koktzoglou, S.A. Tsaftaris, S. Zuehlsdorff, R. Tang, G. Wright, D. Li, "Visualization and Tracking of a Conventional Guidewire with Low Flip Angle SSFP Imaging: An Initial Study," *17th Meeting of the ISMRM*, Hawaii, 2009.
137. S.A. Tsaftaris, X. Zhou, R. Tang, R. Klein, R. Dharmakumar, "An Automated Method for Left Ventricular Localization and Identification of End-Systolic and End-Diastolic Images from Cine Cardiac MRI," *SCMR* 2009, vol. 11, Suppl 1, P222. [[Full text](#)]
138. S.A. Tsaftaris, R. Tang, R. Klein, D. Li, R. Dharmakumar, "Visualizing Regional Myocardial Oxygenation Changes with Statistically Optimal Colormaps," *SCMR*, Florida, 2009, vol. 11, Suppl 1, P276. [[Full text](#)]
139. X. Zhou, R. Tang, R. Klein, S.A. Tsaftaris, D. Li, R. Dharmakumar, "Impact of Temporal Resolution on Cardiac Phase-Resolved Oxygen-Sensitive Myocardial Steady-State Free Precession Imaging," *SCMR*, Florida, 2009, vol. 11, Suppl 1, P178. [[Full text](#)]
140. S.A. Tsaftaris, J. Zujovic, A.K. Katsaggelos, "Restoration of the Cantilever Bowing Distortion in Atomic Force Microscopy," *16th European Signal Processing Conf.*, Lausanne, Switzerland, Aug. 2008. [[PDF](#)] [2C]
141. S.A. Tsaftaris, J. Zujovic, and A.K. Katsaggelos, "Automated Line Flattening of Atomic Force Microscopy Images," *ICIP*, 2008, pp 2968-2971. [[PDF](#)] [4C]
142. E. Maani, S.A. Tsaftaris, A.K. Katsaggelos, "Local Feature Extraction for Video Copy Detection in a Database," *ICIP*, San Diego, CA, 2008, pp. 1716-1719. [[PDF](#)] [33C]
143. S. A. Tsaftaris, V. Andermatt, A. Schlegel, A. K. Katsaggelos, D. Li, R. Dharmakumar, "A Dynamic Programming Solution to Tracking and Elastically Matching Left Ventricular Walls in Cardiac CINE MRI," *ICIP*, San Diego, CA, 2008, pp. 2980-2983. [[PDF](#)] [9C]
144. I. Koktzoglou, S. A. Tsaftaris, S. Zuehlsdorff, D. Li, A. K. Katsaggelos, and R. Dharmakumar, "Automated Tracking of a Passive Endomyocardial Stiletto Catheter with Dephased FLAPS MRI: A Feasibility Study," *16th Meeting of the ISMRM*, May 2008. [[PDF](#)]
145. I. Koktzoglou, S.A. Tsaftaris, D. Li, A.K. Katsaggelos, R. Dharmakumar, "Automated Tracking of a Passive Intramyocardial Needle with Off-Resonance MRI: A Feasibility Study," *SCMR*, January 2008, vol. 10 (Suppl 1):A366. [[PDF](#)]

146. S.A. Tsiftaris, R. Ahuja, D. Shiell, A.K. Katsaggelos, "DNA Microarray Image Intensity Extraction Using Eigen-spots," *ICIP*, Sept. 16-19 2007, San Antonio Texas, vol. VI, 2007, pp. 265-268. [\[PDF\]](#) [3C]
147. S.A. Tsiftaris, A.K. Katsaggelos, "Retrieval Accuracy of Very Large DNA-Based Databases of Digital Signals," *Proc. of 2007 European Signal Processing Conference*, Poznań, Poland, Sept. 3-7, 2007. [\[PDF\]](#)
148. S. A. Tsiftaris, V. Hatzimanikatis, A. K. Katsaggelos, "DNA as a medium for storing digital signals," in *Proc. of 10th International Conference on the Simulation and Synthesis of Living Systems*, L. M. Rocha et al, Eds., vol. 1, June 2006, pp. 303–309. [\[PDF\]](#)
149. S.A. Tsiftaris, V. Hatzimanikatis, A.K. Katsaggelos, "DNA Hybridization as a Similarity Criterion for Querying Digital Signals Stored in DNA Databases", *ICASSP*, Toulouse, France, May 14-19, vol. 2, pp. II-1084 - II-1087, 2006. [\[PDF\]](#) [3C]
150. (invited) S.A. Tsiftaris, A.K. Katsaggelos, "On Designing DNA Databases for the Storage and Retrieval of Digital Signals," in *Proc. of International Conference on Natural Computation, special session on Recent Advances in Biomolecular Computing, Changsha, China, August 26-29, 2005*, Lecture Notes in Computer Science, vol. 3611, pp. 1192-1201, Jul 2005. [\[PDF\]](#) [8C]
151. S.A. Tsiftaris, A.K. Katsaggelos, "A New Codeword Design Algorithm for DNA Based Storage and Retrieval of Digital Signals," in *Proc. 11th International Meeting on DNA-based Computers DNA 11*, London, Ontario, Canada, 2005.
152. S.A. Tsiftaris, A.K. Katsaggelos, T.N. Pappas and E.T. Papoutsakis, "DNA Based Matching of Digital Signals," *ICASSP*, Montreal, Quebec, Canada, May 17-21 2004, vol. 5, pp. 581-584 [\[PDF\]](#) [13C]
153. D. Simitopoulos, S.A. Tsiftaris, N.V. Boulgouris and M.G. Strintzis: "Fast MPEG Watermarking for Copyright Protection," in *Proc. of IEEE Int. Conf. on Electronics, Circuits and Systems (ICECS 2002)*, Dubrovnik, Croatia, vol. 3, pp. 1027-1030, Sept. 2002. [\[PDF\]](#) [10C]
154. D. Simitopoulos, S.A. Tsiftaris, N.V. Boulgouris, M.G. Strintzis: "Compressed-domain Video Watermarking of MPEG Streams," in *Proc. of IEEE Int. Conf. on Multimedia and Expo (ICME 2002)*, Lausanne, Switzerland, vol. 1, pp. 569 -572, Aug. 2002. [\[PDF\]](#) [71C]
155. D. Simitopoulos, S.A. Tsiftaris, N.V. Boulgouris, M.G. Strintzis: "Fast compressed domain watermarking of MPEG multiplexed streams," in *Proc. of Information and Knowledge Management for Integrated Media Communication Workshop*, Madrid, Spain, Nov. 2001. [\[PDF\]](#)
156. D. Simitopoulos, S.A. Tsiftaris, N.V. Boulgouris, M.G. Strintzis: "Digital watermarking of MPEG-1 & MPEG-2 multiplexed streams for copyright protection," in *Proc. of IEEE Int. Workshop on Digital & Computational Video (DCV 2001)*, Tampa, Florida, USA, pp. 140-147, Feb. 2001. [\[PDF\]](#) [17C]