

Yannis Avrithis

+33 299842272
yannis@avrithis.net
avrithis.net



Summary

Dr. Yannis Avrithis is a research scientist in LinkMedia team of Inria Rennes–Bretagne Atlantique, France, carrying out research on computer vision and machine learning. Before that he was at the National and Kapodistrian University of Athens (NKUA) and at the National Technical University of Athens (NTUA), Greece, where he lead the Image and Video Analysis (IVA) team. He holds the HDR qualification from University of Rennes 1, PhD and Diploma degrees from NTUA and MSc degree from Imperial College, University of London, UK. He has been involved in 16 European, 6 French and 10 Greek research projects, he has co-supervised 17 Ph.D. theses and 19 Diploma/Masters theses, and he has published 4 theses, 3 edited volumes, 30 articles in journals, 117 in conferences and workshops, 8 book chapters and 31 technical reports in the above fields. He has contributed to the organization of 23 conferences and workshops. He has served as associate editor in 2 scientific journals and as a reviewer in 15 journals and 15 conferences. He is a senior member of IEEE and a member of ELLIS, ACM, EURASIP and the Technical Chamber of Greece.

Research interests

Computer vision,
machine learning

Visual feature detection, representation of visual appearance and geometry, image matching and registration, image indexing and retrieval, clustering, nearest neighbor search, visual representation learning, unsupervised and semi-supervised learning, object detection and recognition, scene classification, image/video segmentation and tracking, and video summarization.

Education / Qualifications

- 2020 **Habilitation à Diriger des Recherches (HDR) in Computer Science.** University of Rennes 1, France.
- 1996–2001 **Ph.D. in Electrical and Computer Engineering.** National Technical University of Athens, Greece.
- 1993–1994 **M.Sc. in Communications and Signal Processing (with Distinction).** *Imperial College of Science, Technology and Medicine*, University of London, UK.
- 1988–1993 **Diploma/M.Eng. in Electrical and Computer Engineering.** National Technical University of Athens, Greece.

Professional memberships

- 2021– *Member.* European Lab for Learning and Intelligent Systems [ELLIS].
- 2019– *Senior Member.* Institute of Electrical and Electronics Engineers [IEEE].
- 2001– *Member.* European Signal Processing Society [EURASIP].
- 1998– *Member.* Association of Computing Machinery [ACM].
- 1996– *Member.* Institute of Electrical and Electronics Engineers [IEEE].
- 1994– *Member.* Technical Chamber of Greece [TCG].

Employment history

- 2016– **Research Scientist.** *LinkMedia team*, Inria Rennes–Bretagne Atlantique, Campus de Beaulieu, 35042 Rennes Cedex, France.
- 2015 **Research Scientist.** *Laboratory of Algebraic and Geometric Algorithms*, National and Kapodistrian University of Athens, Panepistimioupolis, 157 84 Ilissia, Greece.
- 2014– **Scientific Advisor.** Odd Concepts Inc., 5F Sambo BD, 5 Teheran-ro19-gil, Gangnam-gu, Seoul, Korea.
- 2001–2014 **Senior Researcher.** *Image, Video and Multimedia Systems Laboratory*, National Technical University of Athens, 9 Iroon Polytechniou Str., 157 73 Zographou, Greece.
- 2002–2004 **Project Manager, Research & Development.** Syntax IT, Inc., 218 Mesogion Ave., 155 61 Holargos, Athens, Greece.
- 1997–1999 **Software Engineer.** Infolab Multimedia Ltd, 320 Mesogion Ave., 155 62 Holargos, Athens, Greece.
- 1995–1997 **System Administrator.** *Image, Video and Multimedia Systems Laboratory*, National Technical University of Athens, 9 Iroon Polytechniou Str., 157 73 Athens, Greece.

Teaching / training activities

- 2021 **Social Guest.** *Summer School: PRAIRIE/MIAI Artificial Intelligence Summer School [PAISS]*, Virtual, July 5-9, 2021.
- 2021 **Instructor.** *Seminar: Deep Learning and Computer Vision [DLCV]*, Doctoral School: GRAPES Doctoral school I, National and Kapodistrian University of Athens (NKUA), Virtual, February 1-8, 2021.
- 2019– **Visiting Professor.** *Computer Vision [CV]*, Interdisciplinary postgraduate program MSc in Data Science & Information Technologies (DSIT), National and Kapodistrian University of Athens (NKUA), Greece.
- 2018 **Instructor.** *Seminar: Deep Learning for Computer Vision [DLCV]*, Interdisciplinary postgraduate program: Information Technologies in Medicine and Biology (ITMB), National and Kapodistrian University of Athens (NKUA), Athens, Greece, May 10-11, 2018.
- 2017– **Visiting Professor.** *Deep Learning for Vision [DLV]*, Interdepartmental master Research in Computer Science (SIF), University of Rennes 1 (UR1), University of Southern Brittany (UBS), ENS Rennes, National Institute of Applied Sciences (INSA), CentraleSupélec, Rennes, France.
- 2007–2014 **Adjunct Professor (407/80: 2008–2010).** *Image and Video Analysis [IVA]*, School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Greece.
- 2007 **Organizing Committee member.** *Summer School: Multimedia Semantics: Analysis, Annotation, Retrieval and Applications [SSMS]*, Glasgow, UK, July 15-21, 2007.
- 2006 **Organizing Committee member.** *Summer School: Multimedia Semantics: Analysis, Annotation, Retrieval and Applications [SSMS]*, Chalkidiki, Greece, September 4-8, 2006.
- 2005–2014 **Adjunct Professor (407/80: 2005–2006).** *Signals and Systems [SS]*, School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Greece.

- 2003–2005 **Seminar Organizer.** *Research and Technology Training Network: Multimedia Knowledge Discovery and Management [MultiMine]*, Athens, Greece.
- 1996–1999 **Assistant Lecturer.** *Analog Electronic Circuits*, School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Greece.
- 1996–1998 **Assistant Lecturer.** *Digital Image Processing*, School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Greece.
- 1998–2000 **Lecturer.** *Pascal programming language*, Department of Computer Science, Hellanion University of Portsmouth, Athens, Greece.
- 1998–2000 **Lecturer.** *C programming language*, Department of Computer Science, Hellanion University of Portsmouth, Athens, Greece.

Invited talks

- 3/2019 **Unsupervised and Semi-Supervised Learning on Manifolds.** Linkmedia Team, Inria Rennes–Bretagne Atlantique, France.
- 3/2018 **Deep image retrieval and manifold learning.** Safran Tech, Paris, France.
- 9/2017 **Deep learning and image retrieval.** *In Deep Learning in Vision, Language, and Multimedia Workshop* Inria Rennes–Bretagne Atlantique, France.
- 5/2017 **Searching over manifolds of image regions.** Facebook Research, Menlo Park, CA, US.
- 3/2016 **Large scale clustering and nearest neighbor search.** *In 38th Pattern Recognition and Computer Vision Colloquium*, Center for Machine Perception (CMP), Czech Technical University (CVUT), Prague, Czech Republic.
- 1/2016 **Geometry in shape decomposition, feature detection, matching, retrieval, clustering, and nearest neighbor search.** Institute of Computer Science (ICS), Foundation for Research and Technology–Hellas (FORTH), Heraklion, Greece.
- 11/2015 **Clustering and nearest neighbor search.** Laboratory of Algebraic and Geometric Algorithms (E ρ GA), National and Kapodistrian University of Athens (NKUA), Greece.
- 6/2015 **Geometry in feature detection, matching, search, and clustering.** General Robotics, Automation, Sensing & Perception (GRASP) Laboratory, University of Pennsylvania, US.
- 3/2015 **Approximate nearest neighbor search: binary codes and vector quantization.** Laboratory of Algebraic and Geometric Algorithms (E ρ GA), National and Kapodistrian University of Athens (NKUA), Greece.
- 10/2014 **Image retrieval, vector quantization and nearest neighbor search.** *In μ -Workshop on Computer Vision*, TEXMEX Research Team, Inria Rennes–Bretagne Atlantique, France.
- 4/2012 **Image matching and visual search.** Management of Data, Information and Knowledge (MADGIK) Group, National and Kapodistrian University of Athens (NKUA), Greece.
- 3/2011 **Image matching and visual search: local features and geometry.** Laboratoire Bordelais de Recherche en Informatique (LaBRI), University of Bordeaux, France.
- 9/2006 **Semantic multimedia content analysis.** *In Workshop on Knowledge in Multimedia Content* IST Event 2006, Helsinki, Finland.

Ph.D. students / co-supervision

- 2020– *Konstantinos Tertikas*. Deep learning for 3D shape retrieval.
- 2020– *Shashanka Venkataramanan*. Metric learning for instance- and category-level visual representations.
- 2020– *Bill Psomas*. Incremental learning.
- 2020– *Felipe Torres Figueroa*. Learning discriminative representations to interpret image recognition models.
- 2020– *Deniz Engin*. Semantic multimodal question answering.
- 2018–2021 *Yann-Raphaël Lifchitz*. Representation and adaptation for few-shot image classification.
- 2017–2021 *Hanwei Zhang*. Deep learning in adversarial context.
- 2016–2019 *Oriane Siméoni*. Robust image representation for classification, retrieval and object discovery.
- 2013– *Nikos Papanelopoulos*. Visual sketch retrieval.
- 2009–2014 *Yannis Kalantidis*. Web-scale image search, clustering and localization.
- 2008–2016 *Christos Varytimidis*. Local feature detection for visual information retrieval.
- 2008–2013 *Giorgos Tolias*. Large scale object-based image retrieval.
- 2005–2009 *Evangelos Spyrou*. Semantic search of audiovisual content using knowledge.
- 2004–2009 *Thanos Athanasiadis*. Knowledge technologies and access to audiovisual information.
- 2003–2008 *Konstantinos Papantzikos*. Visual saliency models for the analysis of static and moving images.
- 2003–2008 *Phivos Mylonas*. Adaptive multimedia content access based on context and user profiles.
- 2001–2005 *Manolis Wallace*. Intelligent knowledge-based systems in uncertain environments.

Diploma Thesis/M.Sc. students / co-supervision

- 2020–2021 *Phillip Bellos*. Iterative Label Cleaning for Semi-Supervised Learning.
- 2019–2020 *Bill Psomas*. Metric Learning: A Deep Dive.
- 2019–2020 *Timothée Neitthoffer*. Neural Architecture Growing, Pruning and Search.
- 2015–2016 *Hoel Kervadec*. Deep Hough Networks for Object Detection.
- 2014–2015 *Giorgos Mitsis*. Object Proposals for Rapid Object Detection.
- 2014–2015 *Vasileios Chatzipanos*. Compact Representations for Image Retrieval.
- 2013–2014 *Athanasios Papadopoulos*. Geometric Descriptor Aggregation for Image Retrieval and Classification.
- 2013–2014 *Georgios Perakis*. License Plate Detection and Recognition Using Local Features.
- 2011–2012 *Christos Arvanitis*. Computer Vision Methods for Augmented Reality.
- 2011–2012 *Agni Delvinioti*. Image Classification by Spatial Matching and Indexing.
- 2011–2012 *Spyros Leonardos*. Natural Image Segmentation by Medial Axis Decomposition.
- 2011–2012 *Charalampos Moustafelos*. Image Search Using Visual Synonyms.
- 2008–2009 *George Koumoulos*. Image Analysis and Retrieval by Local Feature Detection.
- 2007–2008 *Yannis Kalantidis*. Image Search Using Visual Features and Geometry.
- 2007–2008 *Christos Varytimidis*. Object Detection and Interactive Image Annotation.

- 2006–2007 *Giorgos Tolias*. Object Detection and Scene Classification Using MPEG-7 Descriptors and Visual Thesaurus.
- 2006–2007 *Antonis Makrimalis*. Person Detection Using Histograms of Oriented Gradients.
- 2005–2006 *Vicky Giannekou*. Image Matching by Shape Analysis.
- 2004–2005 *George Koumoulos*. Image Sequence Summarization—Shot Detection and Key Frame Selection.

Research grants [European]

- 2019–2024 *Advisor*. H2020-860843 / MSCA-ITN, GRAPES: learninG, pRocessing And oPtimizing shapES.
- 2008–2011 *Principal Investigator and Coordinator*. FP7-215453 / IP, WeKnowIt: Emerging, Collective Intelligence for Personal, Organisational and Social Use.
- 2008–2010 *Principal Investigator*. FP7-214306 / IP, JUMAS: Judicial Management by Digital Libraries Semantics.
- 2006–2009 *Principal Investigator*. FP6-034626 / STREP, Imagination: Image-Based Navigation in Multimedia Archives.
- 2006–2009 *Principal Investigator*. FP6-027538 / STREP, BOEMIE: Bootstrapping Ontology Evolution with Multimedia Information Extraction.
- 2006–2009 *Principal Investigator*. FP6-027685 / IP, MESH: Multimedia Semantic Syndication for Enhanced News Services.
- 2006–2010 *Principal Investigator*. FP6-26978 / IP, X-Media: Knowledge Sharing and Reuse Across Media.
- 2006–2008 *Principal Investigator*. FP6-027026 / NoE, K-Space: Knowledge Space of Semantic Inference for Automatic Annotation and Retrieval of Multimedia Content.
- 2004–2007 *Principal Investigator*. FP6-507752 / NoE, MUSCLE: Multimedia Understanding through Semantics, Computation and Learning.
- 2004–2007 *Principal Investigator*. FP6-001765 / IP, aceMedia: Integrating Knowledge, Semantics and Content for User-Centred Intelligent Media Services.
- 2002–2004 *Principal Investigator and Coordinator*. IST-2001-32504, MIRROR: World Communities of Practice for Learning and Innovation in Natural Science.
- 2001–2003 *Principal Investigator and Technical Leader*. IST-1999-20502, FAETHON: Unified Intelligent Access to Heterogeneous Audiovisual Content.
- 1997–2001 *Researcher*. Training and Mobility of Research, PHYSTA: Principled Hybrid Systems Theory and Applications.
- 1998–1999 *Researcher*. Educational Multimedia Task Force, MODULATES: Multimedia Organization for Developing the Understanding and Learning of Advanced Technology in European Schools.
- 1996–1999 *Researcher*. ESPRIT 22266 Multimedia Support Centers, MCUBE: Mediterranean Multimedia - Multimedia Support Center for Culture and Arts.
- 1993–1996 *Researcher*. Human Capital and Mobility, MANADIX: Motion Analysis in Advanced Image Communication Systems.

Research grants [French]

- 2020–2023 *Researcher*. CIFRE-2020, MQA: Semantic Multimodal Question Answering in Domestic Environments.
- 2020–2023 *Researcher*. ANR-19-CE23-0028, MEERQAT: MultimEdia Entity Representation and Question Answering Tasks.

- 2020–2024 *Scientific Partner.* ANR-2019-103385 / JCJC, UNLIR: Unsupervised Representation Learning for Image Recognition.
- 2018–2019 *Researcher.* MIC/BnF, BnF: Classification of cultural heritage images.
- 2018–2021 *Principal Investigator.* CIFRE-2017-1744, Few-shot learning for object recognition in aerial images.
- 2018–2020 *Principal Investigator.* Images & Réseaux AAP-PME-2017, MobilAI: Computer vision for smart phones.

Research grants [Greek]

- 2011–2014 *Researcher.* EPAN II 09SYN-72-922, IS-Helleana: Intelligent System for HELLENic Audiovisual National Aggregator.
- 2006–2008 *Researcher.* Image, Sound and Language Processing, Eikonognosia: Management and Advanced Access to Scientific Data and Documentation of Byzantine Works of Art.
- 2006–2008 *Principal Investigator.* PENED, OntoMedia: Semantic Multimedia Content Analysis Using Knowledge Technologies.
- 2006–2007 *Principal Investigator.* Image, Sound and Language Processing, DELTIO: Multimedia Content Analysis using Ontology Evolution with Application to TV News Programs.
- 2004–2007 *Principal Investigator.* EPAN-03DSBEPRO-44, VisualAsset: Multimedia Document Analysis, Information Extraction and Management.
- 2003–2005 *Principal Investigator.* EPAN, MultiMine: Research and Technology Training Network in Multimedia Knowledge Discovery and Management.
- 1999–2001 *Researcher.* EPET II - EKBAN, PANORAMA: An Intelligent System for Retrieval and Mining of Audiovisual Material.
- 1997–2000 *Researcher.* SYN-96, VoD: Video-on-Demand System Using the MPEG-2 Standard.
- 1997–1999 *Researcher.* EPET II Service Providing Laboratories, IVML: Image, Video and Multimedia Systems Laboratory.
- 1995–1997 *Researcher.* EKBAN-504, NIKA: Generalized Medical Image Processing and Management System.

Conference organization

- 2022 *Area Chair.* IEEE/CVF Conference on Computer Vision and Pattern Recognition [CVPR], New Orleans, Louisiana, June 21-24, 2022.
- 2019 *Workshops Chair.* 27th ACM Multimedia Conference [ACM-MM], Nice, France, Oct 21-25, 2019.
- 2017 *Area Chair.* Multimedia Search and Recommendation, 25th ACM Multimedia Conference [ACM-MM], Mountain View, CA, USA, Oct 23-27, 2017.
- 2017 *Area Chair.* Image, Video, and Multimedia Processing, 25th European Signal Processing Conference [EUSIPCO], Kos, Greece, Aug 28–Sep 2, 2017.
- 2009 *Program Chair.* ACM International Conference on Image and Video Retrieval [CIVR], Santorini, Greece, Jul 8-10, 2009.
- 2009 *General Chair.* 7th International Workshop on Content-Based Multimedia Indexing [CBMI], Chania, Greece, Jun 3-5, 2009.
- 2009 *Program Chair.* 15th International Multimedia Modeling Conference [MMM], Sophia-Antipolis, France, Jan 7-9, 2009.

- 2007 *General Chair*. Second International Conference on Semantic and Digital Media Technologies [SAMT], Genova, Italy, Dec 5-7, 2007.
- 2007 *General Chair*. 8th International Workshop on Image Analysis for Multimedia Interactive Services [WIAMIS], Santorini, Greece, Jun 6-8, 2007.
- 2006 *General Chair*. 1st International Conference on Semantic and Digital Media Technologies [SAMT], Athens, Greece, Dec 6-8, 2006.
- 2006 *Organizer*. Workshop on Knowledge in Multimedia Content [KMC], Information Society Technologies Event 2006 [IST], Helsinki, Finland, Nov 22, 2006.
- 2006 *Organizer*. Workshop on Ontology Evolution and Multimedia Information Extraction [BOEMIE], 15th International Conference on Knowledge Engineering and Knowledge Management [EKAW], Podebrady, Czech Republic, Oct 2-6, 2006.
- 2006 *Organizer*. Special Session on Semantic Multimedia Analysis for Annotation and Retrieval [SMAR], International Conference on Visual Information Engineering [VIE], Bangalore, India, Sep 26-28, 2006.
- 2006 *Organizer*. Special Session on Neural Networks for Semantic Image and Video Analysis [SIVA], International Conference on Artificial Neural Networks [ICANN], Athens, Greece, Sep 10-14, 2006.
- 2006 *Local Organizing Committee member*. International Conference on Artificial Neural Networks [ICANN], Athens, Greece, Sep 10-14, 2006.
- 2005 *Special Sessions Organizer*. 2nd European Workshop on the Integration of Knowledge, Semantic and Digital Media Technologies [EWIMT], London, UK, Nov 30–Dec 1, 2005.
- 2005 *Co-Organizer*. Special Session on Intelligent Multimedia and Semantics [IMS], International Conference on Artificial Neural Networks [ICANN], Warsaw, Poland, Sep 11-15, 2005.
- 2005 *Program Chair*. Workshop on Multimedia Knowledge Discovery and Management [MultiMine], Athens, Greece, Jun 28, 2005.
- 2005 *Local Arrangements*. Workshop on Multimedia and the Semantic Web [MMSW], 2nd European Semantic Web Conference [ESWC], Heraklion, Greece, May 29–Jun 1, 2005.
- 2004 *Session Chair*. EU Project Session, ACM International Conference on Image and Video Retrieval [CIVR], Dublin, Ireland, Jul 21-23, 2004.
- 2003 *Program Co-Chair*. Workshop on Intelligent Access to Audiovisual Content [WIAAC], Athens, Greece, Apr 3, 2003.
- 2001 *Liaison with Industry, Local Organization Committee*. International Workshop on Very Low Bitrate Video Coding [VLBV], Athens, Greece, Oct 11-12, 2001.
- 1997 *Local Arrangements*. International Workshop on Applications and Perspectives of Neural Network Technology in Greece and the Broader Balkan Area [WANN], Athens, Greece, Feb 21, 1997.

PhD juries

- 2020 *Reviewer and Jury member*. Martin Engilberge, Paris-Sorbonne Université, France.
- 2020 *Reviewer and Jury member*. Patrick Bordes, Paris-Sorbonne Université, France.
- 2011 *Reviewer and Jury member*. Rémi Vieux, Université de Bordeaux, France.
- 2008 *Thesis Reviewer*. David Vallet, Universidad Autonoma de Madrid, Spain.

Evaluator activities

- 2021–2023 *Member of Advisory Board.* H2020 project DeepCube [DeepCube], European Commission.
- 2021 *Proposal Reviewer.* Israel Science Foundation [ISF].
- 2020 *Project Reviewer and Rapporteur.* Post-Doctoral Research project, State Education Development Agency [SEDA], Latvia.
- 2017–2018 *Proposal Reviewer and Rapporteur.* State Education Development Agency [SEDA], Latvia.
- 2017–2021 *Proposal Reviewer.* Agence Nationale de la Recherche [ANR], France.
- 2010–2012 *Reviewer and Rapporteur.* FP7-231761 Integrated Project NoTube [NoTube], European Commission, DG Information Society and Media, Unit E2.

Editorial activities

- 2021– *Associate Editor.* Computer Vision and Image Understanding [CVIU].
- 2009–2014 *Associate Editor.* EURASIP Journal on Image and Video Processing [JIVP].

Reviewer in journals

- 2014 ACM Computing Surveys [CSUR]
- 2012 Elsevier: Image and Vision Computing [IVC]
- 2008– Elsevier: Computer Vision and Image Understanding [CVIU]
- 2007–2016 Elsevier: Neurocomputing [NEUCOM]
- 2006–2010 Elsevier: Signal Processing: Image Communication [SP:IC]
- 2006 IEEE Transactions on Evolutionary Computation [TEVC]
- 2005–2009 IEEE Transactions on Multimedia [TMM]
- 2004–2005 IEE Proceedings on Vision, Image and Signal Processing [IEE-VIS]
- 2004–2008 IEEE Transactions on Circuits and Systems for Video Technology [TCSVT]
- 2004– IEEE Transactions on Pattern Analysis and Machine Intelligence [TPAMI]
- 2004–2016 Springer: Multimedia Tools and Applications [MTAP]
- 2004 Springer: Pattern Analysis and Applications [PAA]
- 2003 EURASIP Journal of Applied Signal Processing [JASP]
- 2002 IEEE Transactions on Image Processing [TIP]
- 2002 Springer: Machine Vision and Applications [MVA]

Program Committee member in conferences

- 2013– International Conference on Computer Vision [ICCV]
- 2013– IEEE Conference on Computer Vision and Pattern Recognition [CVPR]
- 2012– European Conference on Computer Vision [ECCV]
- 2012–2016 British Machine Vision Conference [BMVC]
- 2012 ACM International Conference on Multimedia Retrieval [ICMR]
- 2009–2013 International Multimedia Modeling Conference [MMM]
- 2009 International Conference on Digital Signal Processing [DSP]
- 2007–2016 ACM Multimedia Conference [ACM-MM]
- 2007–2008 ACM International Conference on Image and Video Retrieval [CIVR]
- 2007 European Signal Processing Conference [EUSIPCO]
- 2007–2017 International Conference on Multimedia and Expo [ICME]
- 2006–2007 International Conference on Visual Information Engineering [VIE]
- 2005–2017 IEEE International Conference on Acoustics, Speech, and Signal Processing [ICASSP]
- 2004–2016 IEEE International Conference on Image Processing [ICIP]
- 2002–2009 International Conference on Artificial Neural Networks [ICANN]

Program Committee member in workshops

- 2006 ESWC Workshop on Mastering the Gap: From Information Extraction to Semantic Representation [MTG]
- 2006 International Workshop on Semantic Web Annotations for Multimedia [SWAMM]
- 2005 European Workshop on the Integration of Knowledge, Semantic and Digital Media Technologies [EWIMT]
- 2005–2013 Workshop on Image Analysis for Multimedia Interactive Services [WIAMIS]
- 2003–2016 International Workshop on Content-Based Multimedia Indexing [CBMI]

Publications

Theses

- [T4] Y. Avrithis. “Exploring and Learning from Visual Data”. HDR Thesis. Rennes, France: University of Rennes 1 (UR1), July 2020.
- [T3] Y. Avrithis. “Video Sequence Analysis for Content Description, Summarization and Content-Based Retrieval”. PhD thesis. Athens, Greece: School of Electrical and Computer Engineering; National Technical University of Athens (NTUA), Feb. 2001.
- [T2] Y. Avrithis. “Investigating the Capacity of a Cellular CDMA System”. MA thesis. London, UK: Department of Electrical, Electronic Engineering; Imperial College of Science, Technology, and Medicine, University of London (IC), Oct. 1994.
- [T1] Y. Avrithis. “Fuzzy Logic Processor for Control Systems”. MA thesis. Athens, Greece: School of Electrical and Computer Engineering; National Technical University of Athens (NTUA), Sept. 1993.

Edited volumes

- [V3] B. Huet, A.F. Smeaton, K. Mayer-Patel, and Y. Avrithis, eds. *Advances in Multimedia Modeling*. Vol. 5371. Lecture Notes in Computer Science (LNCS). Springer, Jan. 2009. ISBN: 978-3-540-92891-1.
- [V2] B. Falcidieno, M. Spagnuolo, Y. Avrithis, I. Kompatsiaris, and P. Buitelaar, eds. *Semantic Multimedia*. Vol. 4816. Lecture Notes in Computer Science (LNCS). Springer, Dec. 2007. ISBN: 978-3-540-77033-6.
- [V1] Y. Avrithis, Y. Kompatsiaris, S. Staab, and N. O’Connor, eds. *Semantic Multimedia*. 1st. Vol. 4306. Lecture Notes in Computer Science (LNCS). Springer, Dec. 2006. ISBN: 978-3-540-49335-8.

Journal articles

- [J31] Z. Yang, M. Shi, C. Xu, V. Ferrari, and Y. Avrithis. “Training Object Detectors from Few Weakly-Labeled and Many Unlabeled Images”. In: *Pattern Recognition (PR)* 120 (Dec. 2021), p. 108164.
- [J30] H. Zhang, Y. Avrithis, T. Furon, and L. Amsaleg. “Walking on the Edge: Fast, Low-Distortion Adversarial Examples”. In: *IEEE Transactions on Information Forensics and Security (TIFS)* 16 (2021), pp. 701–713.
- [J29] H. Zhang, Y. Avrithis, T. Furon, and L. Amsaleg. “Smooth Adversarial Examples”. In: *EURASIP Journal on Information Security (JIS)* 2020 (2020), pp. 15–26.
- [J28] O. Siméoni, A. Iscen, G. Tolas, Y. Avrithis, and O. Chum. “Graph-based Particular Object Discovery”. In: *Machine Vision and Applications (MVA)* 30.2 (Mar. 2019), pp. 243–254.
- [J27] N. Papanelopoulos, Y. Avrithis, and S. Kollias. “Revisiting the Medial Axis for Planar Shape Decomposition”. In: *Computer Vision and Image Understanding (CVIU)* 179 (Feb. 2019), pp. 66–78.
- [J26] C. Varytimidis, K. Rapantzikos, Y. Avrithis, and S. Kollias. “ α -shapes for local feature detection”. In: *Pattern Recognition (PR)* 50.1 (Feb. 2016), pp. 56–73.

- [J25] G. Tolias, Y. Avrithis, and H. Jégou. “Image search with selective match kernels: aggregation across single and multiple images”. In: *International Journal of Computer Vision (IJCV)* 116.3 (Feb. 2016), pp. 247–261.
- [J24] C. Varytimidis, K. Rapantzikos, Y. Avrithis, and S. Kollias. “Dithering-based Sampling and Weighted α -shapes for Local Feature Detection”. In: *IPSJ Transactions on Computer Vision and Applications (CVA)* 7.1 (Dec. 2015), pp. 189–200.
- [J23] G. Tolias, Y. Kalantidis, Y. Avrithis, and S. Kollias. “Towards large-scale geometry indexing by feature selection”. In: *Computer Vision and Image Understanding (CVIU)* 120 (2014), pp. 31–45.
- [J22] Y. Avrithis and G. Tolias. “Hough Pyramid Matching: Speeded-up geometry re-ranking for large scale image retrieval”. In: *International Journal of Computer Vision (IJCV)* 107.1 (Mar. 2014), pp. 1–19.
- [J21] G. Evangelopoulos, A. Zlatintsi, A. Potamianos, P. Maragos, K. Rapantzikos, G. Skoumas, and Y. Avrithis. “Multimodal Saliency and Fusion for Movie Summarization based on Aural, Visual, and Textual Attention”. In: *IEEE Transactions on Multimedia (TMM)* 15.7 (Nov. 2013), pp. 1553–1568.
- [J20] K. Rapantzikos, Y. Avrithis, and S. Kollias. “Spatiotemporal features for action recognition and salient event detection”. In: *Cognitive Computation (CC) (Special Issue on Saliency, Attention, Visual Search and Picture Scanning)* 3.1 (Mar. 2011). Ed. by J. G. Taylor and V. Cutsuridis, pp. 167–184.
- [J19] Y. Kalantidis, G. Tolias, Y. Avrithis, M. Phinikettos, E. Spyrou, P. Mylonas, and S. Kollias. “VIRaL: Visual Image Retrieval and Localization”. In: *Multimedia Tools and Applications (MTAP)* 51.2 (Jan. 2011), pp. 555–592.
- [J18] K. Rapantzikos, N. Tsapatsoulis, Y. Avrithis, and S. Kollias. “Spatiotemporal Saliency for Video Classification”. In: *Signal Processing: Image Communication (SP:IC)* 24.7 (Aug. 2009), pp. 557–571.
- [J17] Ph. Mylonas, E. Spyrou, Y. Avrithis, and S. Kollias. “Using Visual Context and Region Semantics for High-Level Concept Detection”. In: *IEEE Transactions on Multimedia (TMM)* 11.11 (Feb. 2009), pp. 229–243.
- [J16] E. Spyrou, G. Tolias, P. Mylonas, and Y. Avrithis. “Concept detection and keyframe extraction using a visual thesaurus”. In: *Multimedia Tools and Applications (MTAP)* 41.3 (Feb. 2009), pp. 337–373.
- [J15] Ph. Mylonas, Th. Athanasiadis, M. Wallace, Y. Avrithis, and S. Kollias. “Semantic Representation of Multimedia Content: Knowledge Representation and Semantic Indexing”. In: *Multimedia Tools and Applications (MTAP)* 39.3 (Sept. 2008), pp. 293–327.
- [J14] Ph. Mylonas, D. Vallet, P. Castells, M. Fernández, and Y. Avrithis. “Personalized information retrieval based on context and ontological knowledge”. In: *Knowledge Engineering Review (KER)* 23.1 (Mar. 2008), pp. 73–100.
- [J13] Th. Athanasiadis, Ph. Mylonas, Y. Avrithis, and S. Kollias. “Semantic Image Segmentation and Object Labeling”. In: *IEEE Transactions on Circuits and Systems for Video Technology (CSVT)* 17.3 (Mar. 2007), pp. 298–312.
- [J12] D. Vallet, P. Castells, M. Fernández, Ph. Mylonas, and Y. Avrithis. “Personalized Content Retrieval in Context Using Ontological Knowledge”. In: *IEEE Transactions on Circuits and Systems for Video Technology (CSVT)* 17.3 (Mar. 2007), pp. 336–346.
- [J11] G. Th. Papadopoulos, Ph. Mylonas, V. Mezaris, Y. Avrithis, and I. Kompatsiaris. “Knowledge-Assisted Image Analysis Based on Context and Spatial Optimization”. In: *International Journal on Semantic Web and Information Systems (SWIS)* 2.3 (July 2006), pp. 17–36.
- [J10] K. Rapantzikos, N. Tsapatsoulis, Y. Avrithis, and S. Kollias. “A Bottom-Up Spatiotemporal Visual Attention Model for Video Analysis”. In: *IET Image Processing (IP)* 1.2 (June 2007), pp. 237–248.

- [J9] K. Petridis, S. Bloehdorn, C. Saathoff, N. Simou, S. Dasiopoulou, V. Tzouvaras, S. Handschuh, Y. Avrithis, I. Kompatsiaris, and S. Staab. “Knowledge Representation and Semantic Annotation of Multimedia Content”. In: *IEEE Proceedings on Vision, Image and Signal Processing (VISIP) (Special Issue on Knowledge-Based Digital Media Processing)* 153.3 (June 2006), pp. 255–262.
- [J8] M. Wallace, Y. Avrithis, and S. Kollias. “Computationally efficient sup- t transitive closure for sparse fuzzy binary relations”. In: *Fuzzy Sets and Systems (FSS)* 157.3 (Feb. 2006), pp. 341–372.
- [J7] M. Wallace, Th. Athanasiadis, Y. Avrithis, A. Delopoulos, and S. Kollias. “Integrating Multimedia Archives: The Architecture and the Content Layer”. In: *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans (SMC-A)* 36.1 (Jan. 2006), pp. 34–52.
- [J6] Y. Avrithis, G. Stamou, M. Wallace, F. Marques, P. Salembier, X. Giro, W. Haas, H. Vallant, and M. Zufferey. “Unified Access to Heterogeneous Audiovisual Archives”. In: *Journal of Universal Computer Science (JUCS)* 9.6 (June 2003), pp. 510–519.
- [J5] N. Tsapatsoulis, Y. Avrithis, and S. Kollias. “Facial Image Indexing in Multimedia Databases”. In: *Pattern Analysis and Applications (PAA) (Special Issue on Image Indexation)* 4.2–3 (June 2001), pp. 93–107.
- [J4] Y. Avrithis, Y. Xirouhakis, and S. Kollias. “Affine-Invariant Curve Normalization for Object Shape Representation, Classification, and Retrieval”. In: *Machine Vision and Applications (MVA)* 13.2 (Nov. 2001), pp. 80–94.
- [J3] A. Doulamis, N. Doulamis, Y. Avrithis, and S. Kollias. “A Fuzzy Video Content Representation for Video Summarization and Content-Based Retrieval”. In: *Signal Processing (SP) (Special Issue on Fuzzy Logic in Signal Processing)* 80.6 (June 2000), pp. 1049–1067.
- [J2] N. Doulamis, A. Doulamis, Y. Avrithis, K. Ntalianis, and S. Kollias. “Efficient Summarization of Stereoscopic Video Sequences”. In: *IEEE Transactions on Circuits and Systems for Video Technology (CSVT) (Special Issue on 3D Video Technology)* 10.4 (June 2000), pp. 501–517.
- [J1] Y. Avrithis, A. Doulamis, N. Doulamis, and S. Kollias. “A Stochastic Framework for Optimal Key Frame Extraction from MPEG Video Databases”. In: *Computer Vision and Image Understanding (CVIU) (Special Issue on Content-Based Access of Image and Video Libraries)* 75.1–2 (July 1999), pp. 3–24.

Conference proceedings

- [C117] M. Budnik and Y. Avrithis. “Asymmetric metric learning for knowledge transfer”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Virtual, June 2021.
- [C116] Y. Lifchitz, Y. Avrithis, and S. Picard. “Local Propagation for Few-Shot Learning”. In: *Proceedings of International Conference on Pattern Recognition (ICPR)*. Virtual, Dec. 2020.
- [C115] Y. Lifchitz, Y. Avrithis, and S. Picard. “Few-Shot Few-Shot Learning and the role of Spatial Attention”. In: *Proceedings of International Conference on Pattern Recognition (ICPR)*. Virtual, Dec. 2020.
- [C114] A. Iscen, G. Tolias, Y. Avrithis, O. Chum, and C. Schmid. “Graph convolutional networks for learning with few clean and many noisy labels”. In: *Proceedings of European Conference on Computer Vision (ECCV)*. Virtual, Aug. 2020.
- [C113] O. Siméoni, M. Budnik, Y. Avrithis, and G. Gravier. “Rethinking deep active learning: Using unlabeled data at model training”. In: *Proceedings of International Conference on Pattern Recognition (ICPR)*. Virtual, Dec. 2020.
- [C112] A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Label propagation for Deep Semi-supervised Learning”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Long Beach, CA, US, June 2019.

- [C111] Y. Lifchitz, Y. Avrithis, S. Picard, and A. Bursuc. “Dense Classification and Implanting for Few-shot Learning”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Long Beach, CA, US, June 2019.
- [C110] O. Siméoni, Y. Avrithis, and O. Chum. “Local Features and Visual Words Emerge in Activations”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Long Beach, CA, US, June 2019.
- [C109] A. Iscen, Y. Avrithis, G. Tolias, T. Furon, and O. Chum. “Hybrid Diffusion: Spectral-Temporal Graph Filtering for Manifold Ranking”. In: *Proceedings of Asian Conference on Computer Vision (ACCV)*. Perth, Western Australia, Dec. 2018.
- [C108] A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Mining on Manifolds: Metric Learning without Labels”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Salt Lake City, UT, US, June 2018.
- [C107] F. Radenović, A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Revisiting Oxford and Paris: Large-Scale Image Retrieval Benchmarking”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Salt Lake City, UT, US, June 2018.
- [C106] A. Iscen, Y. Avrithis, G. Tolias, T. Furon, and O. Chum. “Fast Spectral Ranking for Similarity Search”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Salt Lake City, UT, US, June 2018.
- [C105] O. Siméoni, A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Unsupervised object discovery for instance recognition”. In: *Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV)*. Lake Tahoe, NV/CA, US, Mar. 2018.
- [C104] R. Sicre, J. Rabin, Y. Avrithis, T. Furon, F. Jurie, and E. Kijak. “Automatic discovery of discriminative parts as a quadratic assignment problem”. In: *Proceedings of International Workshop on Compact and Efficient Feature Representation and Learning (CEFRL), part of International Conference on Computer Vision (ICCV)*. Venice, Italy, Oct. 2017.
- [C103] A. Iscen, G. Tolias, Y. Avrithis, T. Furon, and O. Chum. “Efficient Diffusion on Region Manifolds: Recovering Small Objects with Compact CNN Representations”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Honolulu, Hawaii, US, July 2017.
- [C102] R. Sicre, Y. Avrithis, E. Kijak, and F. Jurie. “Unsupervised part learning for visual recognition”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Honolulu, Hawaii, US, July 2017.
- [C101] A. Iscen, G. Tolias, Y. Avrithis, T. Furon, and O. Chum. “Panorama to Panorama Matching for Location Recognition”. In: *Proceedings of ACM International Conference on Multimedia Retrieval (ICMR)*. Bucharest, Romania, June 2017.
- [C100] Y. Avrithis, I. Emiris, and G. Samaras. “High-Dimensional Visual Similarity Search: k-d Generalized Randomized Forests”. In: *Proceedings of the 33rd Computer Graphics International (CGI)*. ACM. Heraklion, Greece, June 2016, pp. 25–28.
- [C99] Y. Avrithis, Y. Kalantidis, E. Anagnostopoulos, and I. Z. Emiris. “Web-scale image clustering revisited”. In: *Proceedings of International Conference on Computer Vision (ICCV) (Oral)*. Santiago, Chile, Dec. 2015.
- [C98] N. Papanelopoulos and Y. Avrithis. “Planar shape decomposition made simple”. In: *Proceedings of British Machine Vision Conference (BMVC)*. Swansea, UK, Sept. 2015.
- [C97] M. Shi, Y. Avrithis, and H. Jégou. “Early burst detection for memory-efficient image retrieval”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Boston, MA, US, June 2015.
- [C96] C. Varytimidis, K. Rapantzikos, Y. Avrithis, and S. Kollias. “Improving local features by dithering-based image sampling”. In: *Proceedings of Asian Conference on Computer Vision (ACCV)*. Singapore, Nov. 2014.
- [C95] Y. Kalantidis and Y. Avrithis. “Locally Optimized Product Quantization for Approximate Nearest Neighbor Search”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Columbus, OH, US, June 2014.

- [C94] Y. Avrithis. “Quantize and Conquer: A dimensionality-recursive solution to clustering, vector quantization, and image retrieval”. In: *Proceedings of International Conference on Computer Vision (ICCV)*. Sydney, Australia, Dec. 2013.
- [C93] G. Tolas, Y. Avrithis, and H. Jégou. “To aggregate or not to aggregate: selective match kernels for image search”. In: *Proceedings of International Conference on Computer Vision (ICCV) (Oral)*. Sydney, Australia, Dec. 2013.
- [C92] C. Varytimidis, K. Rapantzikos, and Y. Avrithis. “W α SH: Weighted α -Shapes for Local Feature Detection”. In: *Proceedings of European Conference on Computer Vision (ECCV)*. Florence, Italy, Oct. 2012.
- [C91] Y. Avrithis and Y. Kalantidis. “Approximate Gaussian Mixtures for Large Scale Vocabularies”. In: *Proceedings of European Conference on Computer Vision (ECCV)*. Florence, Italy, Oct. 2012.
- [C90] G. Tolas, Y. Kalantidis, and Y. Avrithis. “SymCity: Feature Selection by Symmetry for Large Scale Image Retrieval”. In: *Proceedings of ACM Multimedia (ACM-MM) (Full paper)*. Nara, Japan: ACM, Oct. 2012.
- [C89] G. Tolas and Y. Avrithis. “Speeded-up, Relaxed Spatial Matching”. In: *Proceedings of International Conference on Computer Vision (ICCV)*. Barcelona, Spain, Nov. 2011.
- [C88] Y. Avrithis and K. Rapantzikos. “The Medial Feature Detector: Stable Regions from Image Boundaries”. In: *Proceedings of International Conference on Computer Vision (ICCV)*. Barcelona, Spain, Nov. 2011.
- [C87] Y. Kalantidis, LG. Pueyo, M. Trevisiol, R. van Zwol, and Y. Avrithis. “Scalable Triangulation-based Logo Recognition”. In: *Proceedings of ACM International Conference on Multimedia Retrieval (ICMR)*. Trento, Italy, Apr. 2011.
- [C86] Y. Avrithis, Y. Kalantidis, G. Tolas, and E. Spyrou. “Retrieving Landmark and Non-Landmark Images from Community Photo Collections”. In: *Proceedings of ACM Multimedia (ACM-MM) (Full paper)*. Firenze, Italy, Oct. 2010.
- [C85] Y. Avrithis, G. Tolas, and Y. Kalantidis. “Feature Map Hashing: Sub-linear Indexing of Appearance and Global Geometry”. In: *Proceedings of ACM Multimedia (ACM-MM) (Full paper)*. Firenze, Italy, Oct. 2010.
- [C84] K. Rapantzikos, Y. Avrithis, and S. Kollias. “Detecting Regions from Single Scale Edges”. In: *Proceedings of International Workshop on Sign, Gesture and Activity (SGA), part of European Conference on Computer Vision (ECCV)*. Hersonissos, Crete, Greece, Sept. 2010.
- [C83] K. Rapantzikos, Y. Avrithis, and S. Kollias. “Dense saliency-based spatiotemporal feature points for action recognition”. In: *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Miami, FL, US, June 2009.
- [C82] G. Evangelopoulos, A. Zlatintsi, G. Skoumas, K. Rapantzikos, A. Potamianos, P. Maragos, and Y. Avrithis. “Video event detection and summarization using audio, visual and text saliency”. In: *Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. Taipei, Taiwan, Apr. 2009.
- [C81] Th. Athanasiadis, N. Simou, G. Papadopoulos, R. Benmokhtar, K. Chandramouli, V. Tzouvaras, V. Mezaris, M. Phinikettos, Y. Avrithis, Y. Kompatsiaris, B. Huet, and E. Izquierdo. “Integrating Image Segmentation and Classification for Fuzzy Knowledge-based Multimedia Indexing”. In: *Proceedings of 15th International Multimedia Modeling Conference (MMM)*. Sophia Antipolis, France, Jan. 2009, pp. 263–274.
- [C80] E. Spyrou, G. Tolas, and Y. Avrithis. “Large Scale Concept Detection in Video Using a Region Thesaurus”. In: *Proceedings of 15th International Multimedia Modeling Conference (MMM)*. Sophia Antipolis, France, Jan. 2009.
- [C79] S. Nikolopoulos, C. Lakka, I. Kompatsiaris, C. Varytimidis, K. Rapantzikos, and Y. Avrithis. “Compound document analysis by fusing evidence across media”. In: *Proceedings of 7th International Workshop on Content-Based Multimedia Indexing (CBMI)*. Chania, Greece, June 2009.

- [C78] Y. Kalantidis, G. Tolias, E. Spyrou, Ph. Mylonas, and Y. Avrithis. “Visual Image Retrieval and Localization”. In: *Proceedings of 7th International Workshop on Content-Based Multimedia Indexing (CBMI)*. Chania, Greece, June 2009.
- [C77] G. Evangelopoulos, K. Rapantzikos, A. Potamianos, P. Maragos, A. Zlatintsi, and Y. Avrithis. “Movie Summarization Based on Audiovisual Saliency Detection”. In: *Proceedings of 15th International Conference on Image Processing (ICIP)*. San Diego, CA, US, Oct. 2008.
- [C76] E. Spyrou, Ph. Mylonas, and Y. Avrithis. “Using Region Semantics And Visual Context For Scene Classification”. In: *Proceedings of 1st Workshop on Multimedia Information Retrieval: New Trends and Challenges (MIR), part of International Conference on Image Processing (ICIP)*. San Diego, CA, US, Oct. 2008.
- [C75] E. Galmar, Th. Athanasiadis, B. Huet, and Y. Avrithis. “Spatiotemporal Semantic Video Segmentation”. In: *Proceedings of 10th International Workshop on Multimedia Signal Processing (MMSP)*. Cairns, Australia: IEEE, Oct. 2008.
- [C74] P. Kapsalas, K. Rapantzikos, A. Sofou, and Y. Avrithis. “Regions Of Interest for Accurate Object Detection”. In: *Proceedings of 6th International Workshop on Content-Based Multimedia Indexing (CBMI)*. London, UK, June 2008.
- [C73] V. Giannekou, P. Tzouveli, Y. Avrithis, and S.Kollias. “Affine invariant curve matching using normalization and curvature scale-space”. In: *Proceedings of 6th International Workshop on Content-Based Multimedia Indexing (CBMI)*. London, UK, June 2008.
- [C72] E. Spyrou, Ph. Mylonas, and Y. Avrithis. “A Visual Context Ontology for Multimedia High-Level Concept Detection”. In: *Proceedings of 5th International Workshop in Modeling and Reasoning in Context (MRC)*. Delft, The Netherlands, June 2008.
- [C71] E. Spyrou, G. Tolias, Ph. Mylonas, and Y. Avrithis. “A Semantic Multimedia Analysis Approach Utilizing a Region Thesaurus and LSA”. In: *Proceedings of 9th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Klagenfurt, Austria, May 2008.
- [C70] Ph. Mylonas, E. Spyrou, and Y. Avrithis. “High-Level Concept Detection based on Mid-level Semantic Information and Contextual Adaptation”. In: *Proceedings of 2nd International Workshop on Semantic Media Adaptation and Personalization (SMAP)*. London, UK, Dec. 2007.
- [C69] E. Spyrou and Y. Avrithis. “Keyframe Extraction using Local Visual Semantics in the form of a Region Thesaurus”. In: *Proceedings of 2nd International Workshop on Semantic Media Adaptation and Personalization (SMAP)*. London, UK, Dec. 2007.
- [C68] E. Spyrou and Y. Avrithis. “A Region Thesaurus Approach for High-Level Concept Detection in the Natural Disaster Domain”. In: *Proceedings of 2nd International Conference on Semantics and Digital Media Technologies (SAMT)*. Genova, Italy, Dec. 2007.
- [C67] Ph. Mylonas, E. Spyrou, and Y. Avrithis. “Enriching a context ontology with mid-level features for semantic multimedia analysis”. In: *Proceedings of 1st Workshop on Multimedia Annotation and Retrieval enabled by Shared Ontologies (MARESO), part of International Conference on Semantics And Digital Media Technologies (SAMT)*. Genova, Italy, Dec. 2007.
- [C66] Ph. Mylonas, N. Simou, V. Tzouvaras, and Y. Avrithis. “Towards Semantic Multimedia Indexing by Classification and Reasoning on Textual Metadata”. In: *Proceedings of Knowledge Acquisition from Multimedia Content Workshop (KAMC), part of International Conference on Semantics And Digital Media Technologies (SAMT)*. Genova, Italy, Dec. 2007.
- [C65] K. Rapantzikos, G. Evangelopoulos, P. Maragos, and Y. Avrithis. “An Audio-Visual Saliency Model for Movie Summarization”. In: *Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP)*. Crete, Greece, Oct. 2007.
- [C64] E. Spyrou, Ph. Mylonas, and Y. Avrithis. “Semantic Multimedia Analysis based on Region Types and Visual Context”. In: *Proceedings of 4th IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI)*. Athens, Greece, Sept. 2007.

- [C63] K. Rapantzikos, Y. Avrithis, and S. Kollias. "SALIENShrink: Saliency-Based Wavelet Shrinkage". In: *Proceedings of 14th International Conference on Image Processing (ICIP)*. Vol. 3. San Antonio, TX, US, Sept. 2007, pp. 333–336.
- [C62] K. Rapantzikos, Y. Avrithis, and S. Kollias. "Spatiotemporal saliency for event detection and representation in the 3D Wavelet Domain: Potential in human action recognition". In: *Proceedings of ACM International Conference on Image and Video Retrieval (CIVR)*. Amsterdam, The Netherlands, July 2007, pp. 294–301.
- [C61] Ph. Mylonas and Y. Avrithis. "Using Multiple Domain Visual Context in Image Analysis". In: *Proceedings of 8th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Santorini, Greece, June 2007.
- [C60] P. Berka, Th. Athanasiadis, and Y. Avrithis. "Rule-based Reasoning for Semantic Image Segmentation and Interpretation". In: *Poster & Demo Proceedings of 1st International Conference on Semantics And digital Media Technology (SAMT)*. Athens, Greece: CEUR-WS, Dec. 2006, pp. 39–40.
- [C59] Th. Athanasiadis, Ph. Mylonas, and Y. Avrithis. "A Context-based Region Labeling Approach for Semantic Image Segmentation". In: *Proceedings of 1st International Conference on Semantics And digital Media Technology (SAMT)*. Athens, Greece, Dec. 2006, pp. 212–225.
- [C58] S. Dasiopoulou, G. Th. Papadopoulos, Ph. Mylonas, Y. Avrithis, and I. Kompatsiaris. "Using Context and a Genetic Algorithm for Knowledge-Assisted Image Analysis". In: *Proceedings of 1st International Conference on Semantics And Digital Media Technology (SAMT)*. Athens, Greece, Dec. 2006.
- [C57] E. Spyrou, G. Koumoulos, Y. Avrithis, and S. Kollias. "Using Local Region Semantics for Concept Detection in Video". In: *Proceedings of 1st International Conference on Semantics And digital Media Technology (SAMT)*. Athens, Greece, Dec. 2006.
- [C56] Ph. Mylonas, Th. Athanasiadis, and Y. Avrithis. "Image Analysis Using Domain Knowledge and Visual Context". In: *Proceedings of 13th International Conference on Systems, Signals and Image Processing (IWSSIP)*. Budapest, Hungary, Sept. 2006.
- [C55] N. Tsapatsoulis, K. Rapantzikos, and Y. Avrithis. "Priority Coding for Video-telephony Applications based on Visual Attention". In: *Proceedings of 2nd International Mobile Multimedia Communications Conference (MobiMedia)*. Alghero, Italy, Sept. 2006.
- [C54] D. Vallet, M. Fernández, P. Castells, Ph. Mylonas, and Y. Avrithis. "A contextual personalization approach based on ontological knowledge". In: *Proceedings of Contexts and Ontologies: Theory, Practice and Applications Workshop (CO), part of 17th European Conference on Artificial Intelligence (ECAI)*. Riva del Garda, Italy, Aug. 2006.
- [C53] D. Vallet, M. Fernández, P. Castells, Ph. Mylonas, and Y. Avrithis. "Personalized Information Retrieval in Context". In: *Proceedings of 3rd International Workshop on Modeling and Retrieval of Context (MRC), part of 21st National Conference on Artificial Intelligence (AAAI)*. Boston, MA, US, July 2006.
- [C52] Ph. Mylonas, D. Vallet, M. Fernández, P. Castells, and Y. Avrithis. "Ontology-based Personalization for Multimedia Content". In: *Proceedings of Semantic Web Personalization Workshop (SWP), part of 3rd European Semantic Web Conference (ESWC)*. Budva, Montenegro, June 2006.
- [C51] P. Tzouveli, Y. Avrithis, and S. Kollias. "Fast Video Object Tracking using Affine Invariant Normalization". In: *Proceedings of 3rd IFIP Conference on Artificial Intelligence Applications & Innovations (AIAI)*. Athens, Greece, June 2006.
- [C50] Th. Athanasiadis, Y. Avrithis, and S. Kollias. "A Semantic Region Growing Approach in Image Segmentation and Annotation". In: *Proceedings of 1st International Workshop on Semantic Web Annotations for Multimedia (SWAMM), part of 15th World Wide Web Conference (WWW)*. Edinburgh, UK, May 2006.
- [C49] Ph. Mylonas, Th. Athanasiadis, and Y. Avrithis. "Improving Image Analysis using a Contextual Approach". In: *Proceedings of 7th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Seoul, Korea, Apr. 2006.

- [C48] E. Spyrou, G. Stamou, Y. Avrithis, and S. Kollias. "Fuzzy Support Vector Machines for Image Classification fusing MPEG-7 Visual Descriptors". In: *Proceedings of 2nd European Workshop on the Integration of Knowledge, Semantic, and Digital Media Techniques (EWIMT)*. London, UK, Nov. 2005.
- [C47] Th. Athanasiadis, V. Tzouvaras, K. Petridis, F. Precioso, Y. Avrithis, and Y. Kompatsiaris. "Using a Multimedia Ontology Infrastructure for Semantic Annotation of Multimedia Content". In: *Proceedings of 5th International Workshop on Knowledge Markup and Semantic Annotation, (SemAnnot), part of 4th International Semantic Web Conference (ISWC)*. Galway, Ireland: CEUR-WS, Nov. 2005, pp. 59–68.
- [C46] K. Petridis, F. Precioso, Th. Athanasiadis, Y. Avrithis, and Y. Kompatsiaris. "Combined Domain Specific and Multimedia Ontologies for Image Understanding". In: *Proceedings of 28th German Conference on Artificial Intelligence (KI)*. Koblenz, Germany, Sept. 2005.
- [C45] P. Castells, M. Fernández, D. Vallet, Ph. Mylonas, and Y. Avrithis. "Self-Tuning Personalized Information Retrieval in an Ontology-Based Framework". In: *Proceedings of First IFIP WG 2.12 & WG 12.4 International Workshop on Web Semantics (SWWS)*. Agia Napa, Cyprus, Nov. 2005.
- [C44] K. Rapantzikos, Y. Avrithis, and S. Kollias. "On the use of spatiotemporal visual attention for video classification". In: *Proceedings of International Workshop on Very Low Bitrate Video Coding (VLBV)*. Sardinia, Italy, Sept. 2005.
- [C43] N. Simou, C. Saathoff, S. Dasiopoulou, E. Spyrou, N. Voisine, V. Tzouvaras, I. Kompatsiaris, Y. Avrithis, and S. Staab. "An Ontology Infrastructure for Multimedia Reasoning". In: *Proceedings of International Workshop Very Low Bitrate Video Coding (VLBV)*. Sardinia, Italy, Sept. 2005.
- [C42] D. Vallet, Ph. Mylonas, M. A. Corella, J. M. Fuentes, P. Castells, and Y. Avrithis. "A Semantically-Enhanced Personalization Framework for Knowledge-Driven Media Services". In: *Proceedings of IADIS International Conference on WWW / Internet (ICWI)*. Lisbon, Portugal, Oct. 2005.
- [C41] E. Spyrou, H. Le Borgne, T. Mailis, E. Cooke, Y. Avrithis, and N. O'Connor. "Fusing MPEG-7 visual descriptors for image classification". In: *Proceedings of International Conference on Artificial Neural Networks (ICANN)*. Warsaw, Poland, Sept. 2005.
- [C40] Ph. Mylonas and Y. Avrithis. "Context modelling for multimedia analysis". In: *Proceedings of 5th International and Interdisciplinary Conference on Modeling and Using Context (CONTEXT)*. Paris, France, July 2005.
- [C39] K. Rapantzikos and Y. Avrithis. "An enhanced spatiotemporal visual attention model for sports video analysis". In: *Proceedings of 4th International Workshop on Content-Based Multimedia Indexing (CBMI)*. Riga, Latvia, June 2005.
- [C38] S. Bloehdorn, K. Petridis, C. Saathoff, N. Simou, V. Tzouvaras, Y. Avrithis, S. Handschuh, Y. Kompatsiaris, S. Staab, and M. G. Strintzis. "Semantic Annotation of Images and Videos for Multimedia Analysis". In: *Proceedings of 2nd European Semantic Web Conference (ESWC)*. Heraklion, Greece, May 2005.
- [C37] N. Simou, V. Tzouvaras, Y. Avrithis, G. Stamou, and S. Kollias. "A Visual Descriptor Ontology for Multimedia Reasoning". In: *Proceedings of 6th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Montreux, Switzerland, Apr. 2005.
- [C36] N. Voisine, S. Dasiopoulou, V. Mezaris, E. Spyrou, Th. Athanasiadis, I. Kompatsiaris, Y. Avrithis, and M. G. Strintzis. "Knowledge-Assisted Video Analysis Using A Genetic Algorithm". In: *Proceedings of 6th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Montreux, Switzerland, Apr. 2005.
- [C35] K. Rapantzikos, Y. Avrithis, and S. Kollias. "Handling Uncertainty in Video Analysis With Spatiotemporal Visual Attention". In: *Proceedings of IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*. Reno, Nevada, May 2005, pp. 213–217.
- [C34] M. Wallace, Th. Athanasiadis, Y. Avrithis, G. Stamou, and S. Kollias. "A mediator system for hetero-lingual audiovisual content". In: *Proceedings of International Conference on Multi-platform e-Publishing (MPEP)*. Athens, Greece, Nov. 2004.

- [C33] P. Hobson, T. May, J. Tromp, Y. Kompatsiaris, and Y. Avrithis. "Achieving Integration of Knowledge and Content Technologies: the aceMedia Project". In: *Proceedings of European Workshop on the Integration of Knowledge, Semantics and Digital Media Technology (EWIMT)*. London, U.K., Nov. 2004.
- [C32] S. Bloehdorn, N. Simou, V. Tzouvaras, K. Petridis, S. Handschuh, Y. Avrithis, I. Kompatsiaris, S. Staab, and M. G. Strintzis. "Knowledge Representation for Semantic Multimedia Content Analysis and Reasoning". In: *Proceedings of European Workshop on the Integration of Knowledge, Semantics and Digital Media Technology (EWIMT)*. London, U.K., Nov. 2004.
- [C31] K. Rapantzikos, N. Tsapatsoulis, and Y. Avrithis. "Spatiotemporal Visual Attention Architecture for Video Analysis". In: *Proceedings of IEEE International Workshop On Multimedia Signal Processing (MMSP)*. Siena, Italy, Sept. 2004, pp. 83–86.
- [C30] M. Wallace and Y. Avrithis. "Fuzzy Relational Knowledge Representation and Context in the Service of Semantic Information Retrieval". In: *Proceedings of IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*. Budapest, Hungary, July 2004.
- [C29] Th. Athanasiadis and Y. Avrithis. "Adding Semantics to Audiovisual Content: The FAETHON Project". In: *Proceedings of 3rd International Conference for Image and Video Retrieval (CIVR)*. Dublin, Ireland, July 2004, pp. 665–673.
- [C28] M. Wallace, Th. Athanasiadis, and Y. Avrithis. "Knowledge Assisted Analysis and Categorization for Semantic Video Retrieval". In: *Proceedings of 3rd International Conference for Image and Video Retrieval (CIVR)*. Dublin, Ireland, July 2004, pp. 555–563.
- [C27] I. Kompatsiaris, Y. Avrithis, P. Hobson, and M.G. Strintzis. "Integrating Knowledge, Semantics and Content for User-Centred Intelligent Media Services: the aceMedia Project". In: *Proceedings of Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Lisboa, Portugal, Apr. 2004.
- [C26] P. Tzouveli, G. Andreou, G. Tsechpenakis, Y. Avrithis, and S. Kollias. "Intelligent Visual Descriptor Extraction from Video Sequences". In: *Proceedings of 1st International Workshop on Adaptive Multimedia Retrieval (AMR)*. Hamburg, Germany, Sept. 2003.
- [C25] M. Wallace, G. Akrivas, Ph. Mylonas, Y. Avrithis, and S. Kollias. "Using context and fuzzy relations to interpret multimedia content". In: *Proceedings of 3rd International Workshop on Content-Based Multimedia Indexing (CBMI)*. Rennes, France, Sept. 2003.
- [C24] Y. Avrithis, G. Stamou, M. Wallace, F. Marques, P. Salembier, X. Giro, W. Haas, H. Vallant, and M. Zufferey. "Unified Access to Heterogeneous Audiovisual Archives". In: *Proceedings of 3rd International Conference on Knowledge Management (IKNOW)*. Graz, Austria, July 2003.
- [C23] G. Stamou, Y. Avrithis, S. Kollias, F. Marques, and P. Salembier. "Semantic Unification of Heterogeneous Multimedia Archives". In: *Proceedings of 4th European Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. London, UK, Apr. 2003.
- [C22] Y. Avrithis, G. Stamou, A. Delopoulos, and S. Kollias. "Intelligent Semantic Access to Audiovisual Content". In: *Proceedings of 2nd Hellenic Conference on Artificial Intelligence (SETN)*. Thessaloniki, Greece, Apr. 2002.
- [C21] G. Akrivas, S. Ioannou, E. Karakoulakis, K. Karpouzis, Y. Avrithis, A. Delopoulos, S. Kollias, I. Varlamis, and M. Vaziriannis. "An Intelligent System for Retrieval and Mining of Audiovisual Material Based on the MPEG-7 Description Schemes". In: *Proceedings of European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems (EUNITE)*. Tenerife, Spain, Dec. 2001.
- [C20] Y. Avrithis and G. Stamou. "FAETHON: Unified Intelligent Access to Heterogeneous Audiovisual Content". In: *Proceedings of International Workshop on Very Low Bitrate Video Coding (VLBV)*. Athens, Greece, Oct. 2001.
- [C19] A. Delopoulos, S. Kollias, Y. Avrithis, W. Haas, and K. Majcen. "Unified Intelligent Access to Heterogeneous Audiovisual Content". In: *Proceedings of 2nd International Workshop in Content-Based Multimedia Indexing (CBMI)*. Brescia, Italy, Sept. 2001.

- [C18] Y. Avrithis, Y. Xirouhakis, and S. Kollias. "Affine-Invariant Curve Normalization for Shape-Based Retrieval". In: *Proceedings of 15th International Conference on Pattern Recognition (ICPR)*. Barcelona, Spain, Sept. 2000, pp. 1015–1018.
- [C17] N. Tsapatsoulis, Y. Avrithis, and S. Kollias. "Efficient Face Detection for Multimedia Applications". In: *Proceedings of the International Conference on Image Processing (ICIP)*. Vancouver, BC, Canada, Sept. 2000.
- [C16] Y. Avrithis, N. Tsapatsoulis, and S. Kollias. "Color-Based Retrieval of Facial Images". In: *Proceedings of 10th European Signal Processing Conference (EUSIPCO)*. Tampere, Finland, Sept. 2000, pp. 1397–1400.
- [C15] Y. Avrithis, N. Tsapatsoulis, and S. Kollias. "Broadcast News Parsing Using Visual Cues: A Robust Face Detection Approach". In: *Proceedings of IEEE International Conference on Multimedia and Expo (ICME)*. New York City, NY, US, July 2000, pp. 1469–1472.
- [C14] N. Doulamis, A. Doulamis, Y. Avrithis, and S. Kollias. "A stochastic framework for optimal key frame extraction from MPEG video databases". In: *Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSp)*. Copenhagen, Denmark, Sept. 1999, pp. 141–146.
- [C13] N. Doulamis, A. Doulamis, Y. Avrithis, K. Ntalianis, and S. Kollias. "An Optimal Framework for Summarization of Stereoscopic Video Sequences". In: *Proceedings of International Workshop on Synthetic-Natural Hybrid Coding and Three Dimensional Imaging (IWSNHC3DI)*. Santorini, Greece, Sept. 1999.
- [C12] N. Tsapatsoulis, Y. Avrithis, and S. Kollias. "On the use of Radon Transform for Facial Expression Recognition". In: *Proceedings of 5th International Conference on Information Systems Analysis and Synthesis (ISAS)*. Orlando, FL, US, Aug. 1999.
- [C11] Y. Avrithis, Y. Xirouhakis, and S. Kollias. "Affine Invariant Representation and Classification of Object Contours for Image and Video Retrieval". In: *Proceedings of 3rd IEEE/IMACS World Multiconference on Circuits, Systems, Communications and Computers (CSCC)*. Athens, Greece, July 1999.
- [C10] A. Doulamis, Y. Avrithis, N. Doulamis, and S. Kollias. "Interactive Content-Based Retrieval in Video Databases Using Fuzzy Classification and Relevance Feedback". In: *Proceedings of IEEE International Conference on Multimedia Computing and Systems (ICMSC)*. Florence, Italy, June 1999, pp. 954–958.
- [C9] Y. Xirouhakis, Y. Avrithis, and S. Kollias. "Image Retrieval and Classification Using Affine Invariant B-Spline Representation and Neural Networks". In: *Proceedings of IEEE Colloquium on Neural Nets and Multimedia (ICNNM)*. London, UK, Oct. 1998, pp. 4/1–4/4.
- [C8] Y. Avrithis, A. Doulamis, N. Doulamis, and S. Kollias. "An Adaptive Approach to Video Indexing and Retrieval Using Fuzzy Classification". In: *Proceedings of International Conference on Very Low Bitrate Video Coding (VLBV)*. Urbana, IL, US, Oct. 1998.
- [C7] N. Doulamis, A. Doulamis, Y. Avrithis, and S. Kollias. "Video Content Representation Using Optimal Extraction of Frames and Scenes". In: *Proceedings of IEEE International Conference on Image Processing (ICIP)*. Chicago, IL, US, Oct. 1998, pp. 875–879.
- [C6] Y. Avrithis, A. Delopoulos, and G. Papageorgiou. "Ultrasonic Array Imaging Using CDMA Techniques". In: *Proceedings of IX European Signal Processing Conference (EUSIPCO)*. Rhodes, Greece, Sept. 1998.
- [C5] A. Doulamis, Y. Avrithis, N. Doulamis, and S. Kollias. "A Genetic Algorithm for Efficient Video Content Representation". In: *Proceedings of IMACS/IFAC International Symposium on Soft Computing in Engineering Applications (SOFTCOM)*. Athens, Greece, June 1998.
- [C4] Y. Avrithis, N. Doulamis, A. Doulamis, and S. Kollias. "Efficient Content Representation in MPEG Video Databases". In: *Proceedings of IEEE Workshop of Content-Based Access of Image and Video Libraries (CBAIVL)*, part of *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Santa Barbara, CA, US, June 1998, pp. 91–95.

- [C3] Y. Avrithis and S. Kollias. “Fuzzy Image Classification Using Multiresolution Neural Networks with Applications to Remote Sensing”. In: *Proceedings of 13th International Conference on Digital Signal Processing (DSP)*. Santorini, Greece, July 1997, pp. 261–264.
- [C2] A. Doulamis, Y. Avrithis, N. Doulamis, and S. Kollias. “Indexing and Retrieval of the Most Characteristic Frames / Scenes in Video Databases”. In: *Proceedings of Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*. Louvain-la-Neuve, Belgium, June 1997, pp. 105–110.
- [C1] Y. Avrithis, A. Delopoulos, and S. Kollias. “An Efficient Scheme for Invariant Optical Character Recognition Using Triple Correlations”. In: *Proceedings of International Conference on Digital Signal Processing (DSP)*. Nicosia, Cyprus, July 1993.

Technical reports

- [R35] C. H. Song, H. J. Han, and Y. Avrithis. “All the attention you need: Global-local, spatial-channel attention for image retrieval”. In: *arXiv preprint arXiv:2107.08000* (July 2021).
- [R34] M. Lazarou, Y. Avrithis, and T. Stathaki. “Tensor feature hallucination for few-shot learning”. In: *arXiv preprint arXiv:2106.05321* (June 2021).
- [R33] S. Venkataramanan, B. Psomas, Y. Avrithis, E. Kijak, L. Amsaleg, and K. Karantzaolos. “It Takes Two to Tango: Mixup for Deep Metric Learning”. In: *arXiv preprint arXiv:2106.04990* (June 2021).
- [R32] M. Lazarou, Y. Avrithis, and T. Stathaki. “Few-shot learning via tensor hallucination”. In: *arXiv preprint arXiv:2104.09467* (Apr. 2021).
- [R31] S. Venkataramanan, Y. Avrithis, E. Kijak, and L. Amsaleg. “AlignMix: Improving representation by interpolating aligned features”. In: *arXiv preprint arXiv:2103.15375* (Mar. 2021).
- [R30] D. Engin, Y. Avrithis, N. Q. K. Duong, and F. Schnitzler. “On the hidden treasure of dialog in video question answering”. In: *arXiv preprint arXiv:2103.14517* (Mar. 2021).
- [R29] Y. Lifchitz, Y. Avrithis, and S. Picard. “Local Propagation for Few-Shot Learning”. In: *arXiv preprint arXiv:2101.01480* (Jan. 2021).
- [R28] M. Lazarou, Y. Avrithis, and T. Stathaki. “Iterative label cleaning for transductive and semi-supervised few-shot learning”. In: *arXiv preprint arXiv:2012.07962* (Dec. 2020).
- [R27] M. Budnik and Y. Avrithis. “Asymmetric metric learning for knowledge transfer”. In: *arXiv preprint arXiv:2006.16331* (June 2020).
- [R26] Y. Lifchitz, Y. Avrithis, and S. Picard. “Few-Shot Few-Shot Learning and the role of Spatial Attention”. In: *arXiv preprint arXiv:2002.07522* (Feb. 2020).
- [R25] H. Zhang, Y. Avrithis, T. Furon, and L. Amsaleg. “Walking on the Edge: Fast, Low-Distortion Adversarial Examples”. In: *arXiv preprint arXiv:1912.02153* (Dec. 2019).
- [R24] Z. Yang, M. Shi, Y. Avrithis, C. Xu, and V. Ferrari. “Training Object Detectors from Few Weakly-Labeled and Many Unlabeled Images”. In: *arXiv preprint arXiv:1912.00384* (Dec. 2019).
- [R23] O. Siméoni, M. Budnik, Y. Avrithis, and G. Gravier. “Rethinking deep active learning: Using unlabeled data at model training”. In: *arXiv preprint arXiv:1911.08177* (Nov. 2019).
- [R22] A. Iscen, G. Tolias, Y. Avrithis, O. Chum, and C. Schmid. “Graph convolutional networks for learning with few clean and many noisy labels”. In: *arXiv preprint arXiv:1910.00324* (Oct. 2019).
- [R21] O. Siméoni, Y. Avrithis, and O. Chum. “Local Features and Visual Words Emerge in Activations”. In: *arXiv preprint arXiv:1905.06358* (May 2019).
- [R20] A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Label propagation for Deep Semi-supervised Learning”. In: *arXiv preprint arXiv:1904.04717* (Apr. 2019).
- [R19] H. Zhang, Y. Avrithis, T. Furon, and L. Amsaleg. “Smooth Adversarial Examples”. In: *arXiv preprint arXiv:1903.11862* (Mar. 2019).

- [R18] Y. Lifchitz, Y. Avrithis, S. Picard, and A. Bursuc. “Dense Classification and Implanting for Few-Shot Learning”. In: *arXiv preprint arXiv:1903.05050* (Mar. 2019).
- [R17] A. Iscen, Y. Avrithis, G. Tolias, T. Furon, and O. Chum. “Hybrid Diffusion: Spectral-Temporal Graph Filtering for Manifold Ranking”. In: *arXiv preprint arXiv:1807.08692* (July 2018).
- [R16] F. Radenović, A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Revisiting Oxford and Paris: Large-Scale Image Retrieval Benchmarking”. In: *arXiv preprint arXiv:1803.11285* (Mar. 2018).
- [R15] A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Mining on Manifolds: Metric Learning without Labels”. In: *arXiv preprint arXiv:1803.11095* (Mar. 2018).
- [R14] O. Siméoni, A. Iscen, G. Tolias, Y. Avrithis, and O. Chum. “Unsupervised object discovery for instance recognition”. In: *arXiv preprint arXiv:1709.04725* (Sept. 2018).
- [R13] A. Iscen, G. Tolias, Y. Avrithis, T. Furon, and O. Chum. “Panorama to panorama matching for location recognition”. In: *arXiv preprint arXiv:1704.06591* (Apr. 2017).
- [R12] R. Sicre, Y. Avrithis, E. Kijak, and F. Jurie. “Unsupervised part learning for visual recognition”. In: *arXiv preprint arXiv:1704.03755* (Apr. 2017).
- [R11] A. Iscen, Y. Avrithis, G. Tolias, T. Furon, and O. Chum. “Fast Spectral Ranking for Similarity Search”. In: *arXiv preprint arXiv:1703.06935* (Mar. 2017).
- [R10] A. Iscen, G. Tolias, Y. Avrithis, T. Furon, and O. Chum. “Efficient Diffusion on Region Manifolds: Recovering Small Objects with Compact CNN Representations”. In: *arXiv preprint arXiv:1611.05113* (Nov. 2016).
- [R9] R. Sicre, J. Rabin, Y. Avrithis, T. Furon, and F. Jurie. “Automatic Discovery of Discriminative Parts As a Quadratic Assignment Problem”. In: *arXiv preprint arXiv:1611.04413* (Nov. 2016).
- [R8] Y. Avrithis, I. Emiris, and G. Samaras. “High-Dimensional Approximate Nearest Neighbor: k-d Generalized Randomized Forests”. In: *arXiv preprint arXiv:1603.09596* (Mar. 2016).
- [R7] G. Tolias, E. Spyrou, and Y. Avrithis. “K-Space at TRECVID 2008”. In: *Proceedings of 6th TRECVID Workshop*. Gaithersburg, USA, Nov. 2008.
- [R6] G. Tolias, E. Spyrou, P. Kapsalas, and Y. Avrithis. “COST292 experimental framework for TRECVID 2008”. In: *Proceedings of 6th TRECVID Workshop*. Gaithersburg, USA, Nov. 2008.
- [R5] Evaggelos Spyrou and Yannis Avrithis. “K-Space at TRECVID 2007”. In: *Proceedings of 5th TRECVID Workshop*. Gaithersburg, USA, Nov. 2007.
- [R4] E. Spyrou, P. Kapsalas, G. Tolias, Ph. Mylonas, and Y. Avrithis. “The COST292 experimental framework for TRECVID 2007”. In: *Proceedings of 5th TRECVID Workshop*. Gaithersburg, USA, Nov. 2007.
- [R3] E. Spyrou, G. Koumoulos, and Y. Avrithis. “K-Space at TRECVID 2006”. In: *Proceedings of 4th TRECVID Workshop*. Gaithersburg, USA, Nov. 2006.
- [R2] E. Spyrou, G. Koumoulos, and Y. Avrithis. “COST292 experiments for TRECVID 2006”. In: *Proceedings of 4th TRECVID Workshop*. Gaithersburg, USA, Nov. 2006.
- [R1] G. Tsechpenakis, Y. Avrithis, and S. Kollias. *Verification Report of Core Experiment on Fast Block-Matching Motion Estimation using Advanced Diamond Zonal Search with Embedded Radar*. Tech. rep. MPEG99/M5116. ISO/IEC JTC1/SC29/WG11, Oct. 1999.

Book chapters

- [B8] K. Rapantzikos, Y. Avrithis, and S. Kollias. “Vision, Attention Control, and Goals Creation System”. In: *Perception-Action Cycle: Models, Architectures and Hardware*. Ed. by V. Cutsuridis, A. Hussain, and J. G. Taylor. Springer, 2011, pp. 363–386.

- [B7] Th. Athanasiadis, Ph. Mylonas, G. Papadopoulos, V. Mezaris, Y. Avrithis, I. Kompatsiaris, and M. Strintzis. “Knowledge Driven Segmentation and Classification”. In: *Multimedia Semantics: Metadata, Analysis and Interaction*. Ed. by R. Troncy, B. Huet, and S. Schenk. Wiley, 2009, pp. 163–181.
- [B6] G. Evangelopoulos, K. Rapantzikos, P. Maragos, Y. Avrithis, and A. Potamianos. “Audiovisual Attention Modeling and Salient Event Detection”. In: *Multimodal Processing and Interaction: Audio, Video, Text*. Ed. by P. Maragos, A. Potamianos, and P. Gros. Springer, 2008, pp. 179–199.
- [B5] S. Dasiopoulou, C. Saathoff, Ph. Mylonas, Y. Avrithis, Y. Kompatsiaris, and S. Staab. “Introducing Context and Reasoning in Visual Content Analysis: An Ontology-based Framework”. In: *Semantic Multimedia and Ontologies: Theory and Applications*. Ed. by Y. Kompatsiaris and P. Hobson. 1st. Springer, Jan. 2008, pp. 99–122. ISBN: 978-1-84800-075-9.
- [B4] S. Dasiopoulou, E. Spyrou, Y. Avrithis, Y. Kompatsiaris, and M.G. Strintzis. “Semantic Processing of Color Images”. In: *Color Image Processing: Emerging Applications*. Ed. by R. Lukac and K. N. Plataniotis. CRC Press, 2006, pp. 259–284.
- [B3] M. Wallace, Ph. Mylonas, G. Akrivas, Y. Avrithis, and S. Kollias. “Automatic thematic categorization of multimedia documents using ontological information and fuzzy algebra”. In: *Soft Computing in Ontologies and Semantic Web*. Ed. by Z. Ma. Vol. 204. Springer, 2006, pp. 247–272.
- [B2] M. Wallace, Y. Avrithis, G. Stamou, and S. Kollias. “Knowledge-Based Multimedia Content Indexing and Retrieval”. In: *Multimedia Content and Semantic Web: Methods, Standards and Tools*. Ed. by G. Stamou and S. Kollias. Wiley, Aug. 2005, pp. 299–338.
- [B1] S. Ioannou, Y. Avrithis, G. Stamou, and S. Kollias. “Fuzzy Data Fusion For Multiple Cue Image And Video Segmentation”. In: *Fuzzy Technologies and Applications*. Ed. by E. Kerre. Springer, May 2002, pp. 195–215.