Spiros Ioannou

PERSONAL DATA

Full name:	Spiros V. Ioannou
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EDUCATION

National Technical University of Athens   2006
PhD

Image, Video and Multimedia Systems Laboratory, School of Electrical & Computer Engineering. PhD title: "Robust feature extraction and facial expression analysis in human-machine interaction"

National Technical University of Athens   2000
Electrical and Computer Engineering Diploma

WORK EXPERIENCE

INACCESS   2012-present
Manager, IT & Service Management

Technical lead for the company's IT team of 7 engineers, 3 network engineers tasked with Photovoltaic plant network design and implementation and 4 engineers with devops and SRE roles tasked with running the cloud and on-premise IT infrastructure. Software delivery, monitoring, identity management, security, DB administration, software & equipment testing, automation of software and device commissioning, several IT-related development tasks and in-house services for a service fleet of 1000s of remote sites, 100s of cloud CPUs, multi-TB DB clusters.
Also undertook several development tasks, mostly IT-related, such as: an SSH public key server (w/UI) for managing user access to nearline hosts, addition of fault-tolerance capabilities to the plant control software, a software which exposes jmx and kafka data as prometheus targets, a TUI packaging automation framework, a software release upgrader with package and db schema version support, resource and network diagnostics, watchdog drivers and several others.

easyKENAK - Negawatt P.C.   2013-present
Co-owner, co-creator

A web-based application which minimizes the time required for the energy certification of buildings. It is targeted to energy certification professionals and has been developed according to Greek standards and regulations for Energy Efficiency of Buildings. Created the UI, backend, integrations, AAA, payments, invoicing, etc. More info can be found here: www.easykenak.gr. The project is about 150Kloc excluding vendor code.

KNOWNET   2012,2014
Project Evaluation

Assessment of equipment, materials, software within the european project "Automated system for monitoring land borders" (Greek-Turkish borders at Orestiada). Electrical and networking standards compliance tests and overall system behaviour under unusual external events were evaluated.

Hellenic National Audiovisual Archive   2008-2011
IT Manager

Specification, management and extension programming of media asset management subsystems (Java, Hibernate, Lucene).

Specification, procurement, installation and management of network and infrastructure equipment (routers, mail servers, web servers, virtual hosting, IT monitoring, film storage monitoring, etc (IOS, Nagios, ...)

Development of several IT subsystems (IT asset management, media asset management statistics, phone call statistics, building power requirements statistics)

Specification and procurement of video digitization systems.

Economic-technical study and specification authoring to be used for the proposal of HeNAA-Information Society S.A. for a digital tapeless video archive and media asset management system. Example subsystems include video encoders, film scanners, PetaByte disk & tape storage, multi-Gbps video streaming.

Development of interoperability system interfaces for the exchange of audiovisual metadata within the european projects VideoActive & Euscreen.

Conference participation: PrestoPrime 2009 (best practices for long-term digital archiving), IASA 2009 (towards a new kind of archive), JTS2010: CCAAA/FIAF/FIAT-IFTA Joint Technical Symposium on digital challenges & opportunities in AV archiving. European Committee for Standardization (CEN) workshop for the standard EN15907, participation and proposals for the next version.

Visits to audiovisual and TV archives: Vienna (ORF), Belgium (RTBF, VRT), Italy (Cinecitta Luce), Luxembourg (CNA). Each visit was followed by an extensive inquiry regarding the building and IT infrastructure, and the organizational choices of various operational workflows (2007-2010).

EBS Ltd
Freelance Developer

2010

Development of part of NEOSET's website. CMS Drupal, javascript, jquery, implemented faceted browsing.

Ministry of Foreign Affairs
Special Secretariat for the Development of International Programmes
Freelance Developer

2008

Development of an information system entitled "international funding portal" for the automatic collection of active procurements of several third parties (UN, EuropeAid, World Bank). The system involved automatic scraping from html, .doc, and other formats from the public databases of those entities, filtering and automatic publishing on a portal of the Ministry of Foreign Affairs.

Hellenic National Audiovisual Archive
Digitization and workflows architecture design

2007

IT and telecommunications infrastructure design.

Air force hospital 251 (half of mil. service)
Developer

2007

Development of a web-portal for the support of the nursing staff. Automatic shift calculation, leaves, staff registry, attendance, weekly shift sheets printout, etc. Was actively used daily.

National Technical University of Athens
Laboratory of Digital Image Processing Video and Multimedia, School of Electrical & Computer Engineering
R&D for EU projects

1999 – 2005

A system for intelligent search and mining from audiovisual databases (ΕΠΕΤ ΙΙ - ΠΑΝΟΡΑΜΑ). Design and implementation of the authorization, search and retrieval subsystems.

A system for digital archiving of audiovisual material. (Ministry of press – General secretariat of press). Design and implementation of the authorization, search and viewing subsystems for the video and metadata.

"Unified Intelligent Access to Heterogeneous Audiovisual Content" (IST-FAETHON) Search and retrieval of audiovisual material based on MPEG-4 and MPEG-7 metadata. One of the first implementations in the world of the MPEG-4 standard.

"Emotionally Rich Man-machine Interaction Systems", Network of Excellence "Humaine" (IST ERMIS), European network of excellence for emotional interfaces in man-machine interaction. Design and implementation (MATLAB) of a system capable of automatic expression estimation (representation using MPEG-4 metadata) and correlation of visual and audio analysis cues.

National Technical University of Athens
Institute of Communication and Computer Systems
Backbone network design

1998

Part of the team which designed the network infrastructure of the Technological Park of Lavrion. Tasked with drafting of the wiring and passive network equipment, and participation in the selection of active network equipment.

AMETEC
Freelance Developer

1998

Development of medical equipment data logging and graph display (RS232, DOS, QuickC) for a Greek importer of experimental medical equipment.

National Technical University of Athens
Computer Center for Electrical Engineers
Fiber optic and microwave laboratory
Software Laboratory, Laboratory of image video and multimedia.
UNIX Administrator

1994-2006

Administration of unix workstations and servers, including name servers, mail servers, database, WWW & FTP servers, security auditing, conversion/modification of 3rd party software, administration of CISCO routers, switches, access servers.

CONTRIBUTIONS TO OSS

All my non-commissioned work is being released as OSS. Some of it has received some notable user interest: xgrk, in 1998 the first Greek X11 keyboard driver for unix-like workstations, ITDB, the $No2$ in popularity (freshmeat.net) GPL system for IT asset and rack management, SMFE in 2002 a MAME frontend (for windows), the first modbus UPS driver (2017) for NUT, and others.

CONFERENCE PARTICIPATION

Presentations
In addition to the greatest part of the publications for conferences which are listed in the "publications" section below:

Presentation in EFG -European Film Gateway: Choosing a Film Scanner (2010) (invited speaker)

TEACHING EXPERIENCE

Lectures in the lab course "image and video technology", Department of Electrical & Computer Engineering NTUA	2000-2005
Seminar at the "National Centre of Cultural and Professional Applications" on behalf of OTENET S.A. Entitled "Technicians for IP networks – Information System Administrators"	2001
Lectures, organization and supervision of laboratory exercises for the course "Programming Techniques» (C, PASCAL), Department of Electrical & Computer Engineering, NTUA	1999-2000
Seminars in UNIX, introductory and for system administrators, addressed to public sector employees	1995-1996

LANGUAGES

English: Fluent, Cambridge First Certificate in English

French: Fluent, Diplôme d'Études en Langue Française (DELF), Diplôme Approfondi de Langue Française (DALF)

TECHNICAL SKILLS

Experience with formal languages: C, Matlab, PHP, JavaScript, SQL, Go; and also: sh, lex, yacc, sed, awk, perl, x86 asm,....

Experience with Databases: Oracle/OCI (limited), PostgreSQL, MySQL, SQLite, Apache Cassandra. Some experience writing PostgreSQL C-lang functions.

Software Development: Very good knowledge of POSIX programming in UNIX-like environments (TCP/UDP/RTP/RTSP client/servers, keyboard, UPS, audio & video streaming services, et.c.), as well as several L7 protocols, experience with PHP/MVC, some older experience in Win32 programming (C++ Builder and native WIN32).

Semantic web technologies and metadata standards: Dublin Core, EN 15907, ISO/IEC13250 (Topic Maps), RDF & XML Namespaces, ISAD, EAD

System Administration: more than 25 years of experience of administering UNIX systems, UNIX (SYSV, BSD, Linux), their network protocols (DNS, SMTP, NFS et.c), virtualization technologies (Xen, Vmware), backup solutions (Bacula), packaging and repo maintenance, containers, k8s.

Hardware development: Small experience in designing digital circuits and microcontroller programming (PIC).

RESEARCH INTERESTS

Image and video knowledge-assisted analysis, image and video spatiotemporal and semantic segmentation, feature extraction, pattern matching, object tracking, automatic and semi-automatic audiovisual material annotation, media asset management, metadata standards, MPEG-4, MPEG-7, Dublin Core, semantic interoperability, video on demand.

PUBLICATIONS – INTERNATIONAL JOURNALS

- Spiros Ioannou, George Caridakis, Kostas Karpouzis and Stefanos Kollias, «Robust Feature Detection for Facial Expression Recognition», EURASIP Journal on Image and Video Processing, Volume 2007, Article ID 29081
- M. Wallace, S. Ioannou, K. Karpouzis, S. Kollias, "Possibilistic Rule Evaluation: A case study in facial expression analysis", International Journal of Fuzzy Systems, Vol 8(4), pp. 219-223, December 2006
- M. Wallace, S. Ioannou, A. Raouzaiou, K. Karpouzis, S. Kollias, "Dealing with Feature Uncertainty in Facial Expression Recognition Using Possibilistic Fuzzy Rule Evaluation", International Journal of Intelligent Systems Technologies and Applications, Volume 1, Number 3-4 / 2006
- S. Ioannou, A. Raouzaiou, V. Tzouvaras, T. Mailis, K. Karpouzis, S. Kollias, "Emotion recognition through facial expression analysis based on a neurofuzzy network", Special Issue on Emotion: Understanding & Recognition, Neural Networks, Elsevier, Volume 18, Issue 4, May 2005, Pages 423-435
- K. Karpouzis, G. Moschovitis, K. Ntalianis, S. Ioannou, and S. Kollias, "Web Access To Large Audiovisual Assets Based On User Preferences", Multimedia Tools and Applications, vol. 22, no. 3, pp. 215-234, March 2004, Kluwer Academic Publishers

PUBLICATIONS – BOOKS

- K. Karpouzis, A. Drosopoulos, S. Ioannou, A. Raouzaiou, N. Tsapatsoulis, S. Kollias, "Facial and Body Feature Extraction for Emotionally-Rich HCI", Mehdi Khosrow-Pour (ed.), Encyclopedia of Information Science and Technology, Idea Group Publishers, pp. 1180 - 1185, 2005
- K. Karpouzis, A. Raouzaiou, A. Drosopoulos, S. Ioannou, T. Balomenos, N. Tsapatsoulis and S. Kollias, "Facial expression and gesture analysis for emotionally-rich man-machine interaction", N. Sarris, M. Strintzis, (eds.), 3D Modeling and Animation: Synthesis and Analysis Techniques, pp. 175-200, Idea Group Publ., 2004
- S. Ioannou, Y. Avrithis, G. Stamou and S. Kollias, "Fuzzy Data Fusion For Multiple Cue Image And Video Segmentation", Fuzzy Technologies and Applications, E. Kerre (Editor), Springer-Verlag, 2002.

PUBLICATIONS TO CONFERENCES & CONFERENCE PROCEEDINGS

- S. Ioannou, L. Kessous, G. Caridakis, K. Karpouzis, V. Aharonson, S. Kollias, "Adaptive On-Line Neural Network Retraining for Real Life Multimodal Emotion Recognition", International Conference on Artificial Neural Networks (ICANN) 2006, Athens, Greece, September 2006.
- S. Ioannou, M. Wallace and S. Kollias, "Intelligent Facial Analysis and Expression Recognition", International Joint Conference on Neural Networks (IJCNN), Vancouver, Canada, July 2006.
- S. Ioannou, M. Wallace, K. Karpouzis and S. Kollias, "A Robust Scheme for Facial Analysis and Expression Recognition", Measuring Behavior 2005, 5th International Conference on Methods and Techniques in Behavioral Research, Wageningen, The Netherlands, 30 August - 2 September 2005
- S. Ioannou, M. Wallace, K. Karpouzis, A. Raouzaiou and S. Kollias, "Combination of Multiple Extraction Algorithms in the Detection of Facial Features", Proceedings of the IEEE International Conference on Image Processing (ICIP), Genova, Italy, September 2005
- S. Ioannou, M. Wallace, K. Karpouzis, A. Raouzaiou and S. Kollias, "Confidence-Based Fusion of Multiple Feature Cues for Facial Expression Recognition", FUZZ-IEEE 2005, May 22-25, Reno, Nevada, USA
- R. Cowie, E. Douglas-Cowie, J. Taylor, S. Ioannou, M. Wallace, S. Kollias, "An Intelligent System for Facial Emotion Recognition", IEEE International Conference on Multimedia & Expo, July 6-8, 2005, Amsterdam, The Netherlands
- Raouzaiou, S. Ioannou, G. Akrivas, K. Karpouzis and S. Kollias, "Adaptation of Expression Analysis Based on Evaluation Principles", Fourth European Symposium on Intelligent Technologies and their implementation on Smart Adaptive Systems (Eunite 2004), Aachen, Germany, June 2004.
- S. Ioannou, A. Raouzaiou, K. Karpouzis, M. Pertselakis, N. Tsapatsoulis, S.Kollias, "Adaptive Rule-Based Facial Expression Recognition", G. Vouros, T. Panayiotopoulos (Eds.), Lecture Notes in Artificial Intelligence, Vol. 3025, Springer-Verlag, pp. 466 - 475, 2004.
- S. Ioannou, A. Raouzaiou, K. Karpouzis and S. Kollias, "Adaptation of Facial Feature Extraction and Rule Generation in Emotion-Analysis Systems", International Joint Conference on Neural Networks (IJCNN 2004), Budapest, Hungary, July 2004.
- T. Balomenos, A. Raouzaiou, S. Ioannou, A. Drosopoulos, K. Karpouzis, and S. Kollias, "Emotion Analysis In Man-Machine Interaction Systems", Workshop on Multimodal Interaction and Related Machine Learning Algorithms (MLMI04), Geneva
- T. Balomenos, A. Raouzaiou, S. Ioannou, A. Drosopoulos, K. Karpouzis, S. Kollias, "Emotion Analysis in Man-Machine Interaction Systems", Samy Bengio, Hervé Bourlard (Eds.), Machine Learning for Multimodal Interaction, Lecture Notes in Computer Science, Vol. 3361, 2004, pp. 318 - 328, Springer-Verlag .
- Raouzaiou, S. Ioannou, K. Karpouzis, N. Tsapatsoulis, S. Kollias, R. Cowie, "An Intelligent Scheme for Facial Expression Recognition", O. Kaynak (ed.), Artificial Neural Networks and Neural Information Processing, Lecture notes in Computer Science 2714, Springer, pp. 1109 – 1116, 2003.

- Raouzaiou, S. Ioannou, K. Karpouzis, S. Kollias, R. Cowie , "Facial Expression Analysis", Eunite 2003, Third European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems,Oulu, Finland
- Drosopoulos, T. Mpalomenos, S. Ioannou, K. Karpouzis and S. Kollias, "Emotionally-rich Man-machine Interaction Based on Gesture Analysis", Human-Computer Interaction International 2003, 22 - 27 June, Crete, Greece, vol. 4, pp. 1372 - 1376
- Raouzaiou, S. Ioannou, K. Karpouzis, N. Tsapatsoulis, S. Kollias, R. Cowie , "An Intelligent Scheme for Facial Expression Recognition", Proceedings of the International Conference on Artificial Neural Networks (ICANN), Istanbul, Turkey, June 2003
- S. Ioannou, G. Akrivas, "Archiving multimedia content descriptions: an early adaptation of MPEG-7", Proceedings of Int. Workshop on Very Low Bitrate Video Coding (VLBV01)
- Varlamis, M. Vazirgiannis, P. Poulos, G. Akrivas, S. Ioannou, "X-Database. A middleware for collaborative video annotation, storage and retrieval", proceedings of the 8th Panhellenic Conference. Cyprus 2001.
- 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", Eunite 2001, European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems, Tenerife, Spain
- K. Ntalianis, S. Ioannou, K. Karpouzis, G. Moschovitis and S. Kollias, "Visual Information Retrieval from Annotated Large Audiovisual Assets Based on User Profiling and Collaborative Recommendations", Proceedings of the IEEE International Conference on Multimedia and Exposition (ICME01), Tokyo, Japan
- S. Ioannou, G. Mosxovitis, K. Ntalianis, K. Karpouzis and S. Kollias, "Effective Access to Large Audiovisual Assets Based on User Preferences", Proceedings of the ACM Multimedia 2000, Los Angeles, CA, USA, November 2000

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