

# Detailed Curriculum Vitae

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KYRIAKOS KRITIKOS

*PhD in Computer Science*

**2019**

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## Personal Details

**Last Name:** Kritikos

**First Name:** Kyriakos

**Father Name:** Emmanouil

**Mother Name:** Vasiliki

**Birth Date:** 16/10/1978

**Birth Place:** Rodos Dodekanisou

**Family Status:** Married with 2 children

**Military Obligations:** Fulfilled in 2011

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## Education

- **PhD:** 2008, Computer Science Department, University of Crete, Greece, supervisor: Prof. Dimitris Plexousakis, QoS-Based Web Service Description and Discovery
- **M.Sc.:** 2002, Computer Science Department, University of Crete, Greece, supervisor: Prof. Catherine Houstis, Distributed Scientific Workflow Management System
- **B.Sc.:** 2000, Computer Science Department, University of Crete, Greece

## Current Position

- University of the Aegean, Greece, Associate Professor
- Information Systems Laboratory, ICS-FORTH, Greece, Affiliated Researcher

## Previous Positions

1. 8 years, Information Systems Laboratory, ICS-FORTH, Greece, Post-Doc Researcher
2. 1 year, Department of Electronics and Information, Politecnico di Milano, Italy, Post-Doc Researcher
3. 9 months, Information Science and Technologies Institute (ISTI), Italian National Research Council (CNR), Italy, ERCIM Post-Doc Researcher
4. 9 months, Service Science and Innovation (SSI) Department, CRP Henri Tudor public research centre, Luxembourg, ERCIM Post-Doc Researcher
5. 1.5 years, *Com ToNet S.A.*, Greece, Research and Development Engineer
6. 4 years, Information Systems Laboratory, ICS-FORTH, Greece, Doctoral Researcher

## Fellowships/Prizes/Awards

1. 2009 - 2011, ERCIM Post-Doc Scholarship at CRP Henri Tudor and CNR.

## Teaching Activities

1. 2020, Lecturer, “Networks and Cloud Technologies”, Department of Information and Communication Systems Engineering, University of the Aegean, Greece.
2. 2020, Lecturer, “Internet Programming”, Department of Information and Communication Systems Engineering, University of the Aegean, Greece.
3. 2020, Lecturer, “Object-oriented Programming I”, Department of Information and Communication Systems Engineering, University of the Aegean, Greece.
4. 2019, Lecturer, “Computer Network Security and Privacy Enhancing Technologies”, Department of Information and Communication Systems Engineering, University of the Aegean, Greece.
5. 2019, Lecturer, “Business Process Management Information Systems and Workflows”, Department of Informatics Engineering, Technical University of Crete, Greece

6. 2019, Lecturer, “Machine Learning and Data Mining”, Department of Informatics Engineering, Technical University of Crete, Greece
7. 2018, Lecturer, “Business Process Management Information Systems and Workflows”, Department of Informatics Engineering, Technical University of Crete, Greece
8. 2015, Lecturer, "Business and Workflow Management, Computer Science Department, University of Crete, Greece
9. 2009, Co-lecturer, “Advanced Topics on Information Systems”, Department of Electronics and Information, Politecnico di Milano, Italy
10. 2000-2008, Teaching Assistant, "Business and Workflow Management" & "Probability Theory", Computer Science Department, University of Crete

## Supervisions

1. 3 graduate students, 6 months, University of Crete, Greece
2. 1 PhD student, 4 years, University of Crete, Greece
3. 1 MSc student, 2 years, University of Crete, Greece
4. Member of PhD Committee of two PhD students, one in University of Camerino and another in MIT, Lucca.

## Research Experience & Activities

Kyriakos Kritikos can be considered as an experienced researcher with a very extensive record of publications, who has conducted research work on various areas which include: service (quality) management, business service design, cloud modelling and deployment reasoning, interactive application design, semantic service description and negotiation, security modelling, and risk/vulnerability assessment. Different parts of the conducted work have been performed in the different positions that he has taken both in Greek as well as foreign research institutes/organisations. In the following, the major achievements of Dr. Kritikos in his current research career are analysed along with the place in which they were accomplished.

**Semantic non-functional service description:** During his PhD, Dr. Kritikos proposed a rich, formal, and extensible QoS service meta-model in the form of an ontology-based language called OWL-Q. Apart from this meta-model, a set of rules were also developed, enabling both the syntactic and semantic validation of the OWL-Q models conforming to that meta-model. This meta-model was exploited and extended in both the S-Cube and CloudSocket European projects.

During his post-doc at Politecnico di Milano, conducted in the context of the S-Cube European project, OWL-Q was extended in two directions: (a) at the meta-model level with the extensions concerning formulating the negotiability of the QoS terms as well as specifying the negotiation capabilities of the involved parties for providing negotiation support in terms of the right negotiation protocol selection; (b) the proposal of an extensive and hierarchical QoS model encompassing a plethora of domain-independent QoS terms spanning both the service and infrastructure layers. Such a model cannot only be used for service discovery purposes but also to support service monitoring and adaptation.

During his position at ICS-FORTH and especially his participation in the CloudSocket European project, OWL-Q was extended in order to cover: (a) the rich specification of SLAs featuring the explicit coverage of service levels and respective cost models as well as the rich specification of remediation actions in the context of SLO violations; (b) the full specification of Key Performance Indicators (KPIs) and their mapping to organisational goals enabling to perform a goal-based analysis for discovering the impact of KPIs in the achievement of these goals, which can span both the strategic, tactical and operational level.

**Cloud Application Description:** In the context of the PaaSage project, in which Dr. Kritikos was involved from his position in ICS-FORTH, he along with other researchers have developed a novel cloud application description language called CAMEL. This is a very rich language covering multiple aspects in cloud application specification, including deployment, requirement, metric, scalability, security and organisation. In the CloudSocket project, Dr. Kritikos extended this language with the capability to capture allocation decisions at the SaaS (mapping BPaaS workflow tasks to certain internal or external SaaS) and PaaS levels as well as to specify complex adaptation rules in the form of mappings from complex event patterns to cross-layer adaptation workflows.

CAMEL is currently exploited in the context of on-going European projects, such as Melodic and Functionizer, in which Dr. Kritikos is also participating. In Melodic, CAMEL is extended with the capability to cover the description of big data applications, thus also additionally capturing the (big) data aspect, while in Functionizer the extension will cover the modelling of serverless applications.

**QoS-based service specification alignment:** During his PhD, Dr. Kritikos has developed a semantic QoS metric matching algorithm enabling the alignment of QoS-based service specifications according to their QoS terms. Such an alignment is achieved through the proposal of a novel QoS-based service description alignment algorithm. The combination of these two algorithms enables to handle a major problem in (cloud) service description in the real world which concerns the heterogeneity in the specification of the QoS capabilities of (cloud) services. Further, through the proper alignment of the QoS terms, the discovery of the non-functional service discovery process becomes much improved.

**Service Discovery:** During his PhD, Dr. Kritikos devised and implemented a service discovery framework used for matchmaking QoS offerings and demands (i.e. QoS-based service descriptions) that was first transforming these descriptions into constraint models based on a specific and novel matchmaking metric and then solving them to infer if there was a match between them. Various QoS-based service matchmaking algorithms were devised and implemented that were realizing this novel matchmaking metric and exploiting different constraint solving techniques: Mixed-Integer programming for QoS-based service descriptions containing linear constraints and Constraint Programming for those descriptions containing also non-linear constraints.

During his post-doc at CNR, Dr. Kritikos devised and implemented a hybrid service matchmaker. This matchmaker was able to first match a semantic service (functional) query with the service queries previously processed (that were organized in an intelligent way) so as to infer equivalence and subsumption-based query relationships. If a match was found, then the results of the new query were produced from those of the old query that matched it. If no such match was found, then the service query was given as input to a semantic service

matchmaking engine (OWLS-MX and ALIVE are currently used) so as to match it with the semantic service (functional) advertisements stored in the matchmaker's repository.

During his involvement in the CloudSocket project, Dr. Kritikos has extended his service matchmaking work along two main directions: (a) the proposal of a new matchmaking technique which employs ontology-subsumption for matching QoS-based service descriptions. Such a technique constitutes an alternative way to match unary-constrained service descriptions with respect to constraint solving ones. Its main advantage is that ontology subsumption can be combined with QoS term matching in a combined way rather than requiring first to perform QoS term matching and then constraint solving for realising service matchmaking by executing two different algorithms; (b) the investigation of different ways via service matchmaking can be performed according to both the functional and QoS aspects by the capability to flexibly combine state-of-the-art semantic functional and non-functional service matchmaking algorithms.

**Service Composition & Multi-Cloud Application Deployment / Allocation Reasoning:**

During his post-doc at Politecnico di Milano, Dr. Kritikos proposed a novel service concretization algorithm that takes into account energy and performance trade-offs and advances the state-of-the-art by considering the range of values for service quality attributes and not equality constraints and the dependencies between quality and energy attributes, and producing a solution that satisfies in the best possible way the constraints of all the execution paths of the composite service plan even in the case that the quality and energy requirements of the designer are over-constrained.

In the context of the PaaS and CloudSocket projects, this algorithm was extended in order to also cover the infrastructure level, thus enabling the selection of both SaaS and IaaS services. Such a selection leads to a more optimal result than the one in which the two kinds of services are confronted by different service selection algorithms. This is due to the fact that the selection of IaaS services has an impact on the quality of the internal SaaS services of the application which in turn can influence the quality of the overall service-based cloud application. Another major feature of this algorithm is that it is able to explore design choices in the form of either deciding to select an external SaaS service or an IaaS service for supporting an internal SaaS service in the context of realising the same application (functional) task.

The cross-cloud service selection algorithm was recently extended in order to also exploit the knowledge derived from the execution history of applications (either the current one or those equivalent or similar to the current one) through the employment of a Knowledge Base. Such a knowledge concerns the best possible allocation solution for either the whole application or each application task/component at the IaaS level. This knowledge enables to fix some parts of the service selection problem and thus enables its more rapid solving.

**Service Negotiation:** As already mentioned, during his post-doc at Politecnico di Milano, Dr. Kritikos extended OWL-Q by modelling the negotiation capabilities, strategies, and negotiation protocol actions the negotiation participants (i.e. service providers and requesters or agents acting on behalf of them) were able to perform. He then proposed a semantic framework that was able to infer which negotiation protocols were supported by all the negotiation participants with respect to the actions these participants were able to perform or could delegate for execution to other trusted parties. The latter framework was relying on the

extended OWL-Q descriptions and a specific set of rules in order to perform the inference of the compatible negotiation protocols.

**Business Service Design:** During his post-doc at CRP Henri-Tudor, Dr. Kritikos has developed a goal-based business service design method which starts from a goal model and is able to reach the implementation level by suggesting a certain software service composition which is able to realise the functionality of the designed business service. The method follows two major steps: (a) from the goal model and its actual top goal that needs to be satisfied by the designed business service, it is able to find different compositions of business services which fully or partially satisfy this business goal; (b) from these business service compositions along with the knowledge of which leaf goals in the model are not satisfied, the second step attempts to both select the best possible business service composition as well as the best way this composition can be concretised through a combination of software services which also cover the gap in the satisfaction of leaf operational goals.

The non-functional requirements that can be posed over a business service are derived based on a novel approach which attempts to consolidate the views of different organisation stakeholders as well as their relative power. Such views are supplied in the form of utility functions on the performance of the required BS functional goal and its sub-goals, thus covering all the goal levels in the respective goal model. As such, the consolidation is performed at the goal and QoS term level through the production of a certain overall utility function that is derived from those that have been posed by the different stakeholders.

**Interactive service-based application design:** During his post-doc at CNR, Dr. Kritikos proposed a novel design approach for interactive service-based applications that was considering Human Computer Interaction (HCI) task models and domain ontologies and was able to map existing services to the leaf system tasks of the task models and then to select only one of these services by executing a novel service concretization algorithm. The latter algorithm was performing service selection for each leaf system task by selecting the service that matches the task in the best possible way while trying to minimize the overall information loss between information exchanging service pairs. The matching of services to tasks was performed by first transforming the task description into a semantic service query (in OWL-S), where the input and output objects of the task were mapped to domain ontology concepts, and then issuing this query to the hybrid matchmaker that was analyzed in the previous activity (i.e. service discovery).

**Service Monitoring & Adaptation:** During his post-doc at Politecnico di Milano, Dr. Kritikos and other researchers proposed an approach where missing values of KPI metrics are produced from other available monitoring data (from the same or different layer), while also the uncertainty of all the measurements is calculated in terms of two metrics: accuracy and confidence. The latter metrics can be used for assessing what is the actual range of values the metric may have taken, with respect to the measured value, and with what probability or even for deriving useful facts such as the sure violation of a KPI.

In the context of his position in ICS-FORTH, Dr. Kritikos and other colleagues have proposed a cross-layer framework for service-based application monitoring and adaptation. The main benefits of such a framework are: (a) it can cover any kind of metric at any level of abstraction that can be either concern a single cloud or multiple clouds, through the exploitation of the OWL-Q language; (b) it is able to execute adaptation workflows across



different layers in a synchronised manner in order to confront a complex, problematic situation; (c) it supports both pro-active and re-active service-based application adaptation. Pro-active adaptation is supported through the production of rules which concern the mapping of warning events to respective adaptation actions. The agglomeration of such events can pronounce the occurrence of a SLO/KPI violation such that their addressing can enable the prevention of such violation before it actually occurs, thus reducing to the minimum the actual reaction time and cost which would have to be paid in the case of reactive adaptation. The pro-active adaptation rules are produced through a two step procedure: (i) the event patterns are initially produced through employing a logic-based event mining technique which does not require employing any difficult-to-configure threshold like in other event mining techniques; (b) the event patterns are mapped to an adaptation action workflow through employing a semi-automatic approach that combines in a meaningful way the adaptation actions that participate in single adaptation rules that have been specified by the expert and mapped to single events from the event pattern.

Recently, in the context of the CloudSocket project, this framework has been extended in order to better cover the infrastructure level. In addition, such an extension also enables to dynamically concretise the adaptation workflow based on the current adaptation capabilities of the system and the user preferences. Further, it supports the manual triggering of the execution of adaptation workflows that are specified by the expert in case that the current problematic situation has not been covered by the adaptation rules that have been already specified. Finally, this extension supports the recording of the adaptation history which can enable conducting analytics on it to derive valuable knowledge that could be used for the optimisation of the current rule set that has been already modelled.

**Security Modelling & Adaptation:** In the context of the PaaSage project, Dr. Kritikos has developed a security meta-model which has been incorporated in the CAMEL language. Through this meta-model, a certain model has been developed which covers the specification of relationships between security domains, controls, metrics and properties. Such a model has been derived from multiple sources, including the EC's C-SIG guidelines on cloud SLA description, the Cloud Security Alliance's Security Control Matrix and the security model in the Cumulus project, by employing a particular semi-automatic approach. This model can be used for describing both high-level and low-level security capabilities and requirements, where the high-level is covered through security controls and the low-level from constraints on security properties or metrics, as well their connection which can cater for better traceability. In particular, the low-level security capabilities can be used to check the satisfaction of the stated high-level security capabilities by exploiting the connections between security metrics / properties and security controls in the derived security model.

In the same project, a CAMEL extension enabling to specify security-oriented adaptation rules by exploiting conditions on security metrics specified by the security meta-model was also proposed. Such an extension was also coupled with a certain security-oriented adaptation framework for multi-cloud applications which enables to adapt security applications at runtime when the conditions of respective security rules are violated. Such a framework was also shown how to be combined with the PaaSage platform in order to support the security-based adaptive provisioning of multi-cloud applications.

**Risk/Vulnerability Assessment:** In the context of the Unicorn project, Dr. Kritikos along with colleagues has proposed a security meta-model for the configuration of intrusion

detection/protection as well as vulnerability detection software which is part of an overall framework for the security-based deployment and adaptation of multi-cloud applications. In addition, he has proposed a novel security architecture for multi-cloud applications which enables to orchestrate vulnerability assessment software according to the user (application) requirements in order to have a better coverage of all the possible vulnerabilities that a certain application might have.

**KPI Assessment Framework:** Dr. Kritikos has developed a semantic KPI assessment framework for business process as a service (BPaaS) services which has the following capabilities: (a) assessment of KPIs; (b) drill-down of KPIs according to two different modes: (i) based on KPI parent-child relationships in a top-down fashion which enables to find the low-level KPI that can be blamed for the violation of a root one; (ii) based on KPI metric parent-child relationships which enables a fine-grained root cause analysis at an even lower abstraction level to find the exact component at the infrastructure level that could be blamed for the violation of a root KPI. By relying on semantics, this framework is able to more accurately assess KPIs. In addition, it also supports the on-demand evaluation of KPIs based on their metrics which allows for a more user-intuitive and flexible exploration of the KPI metric space which is invaluable in the context of new KPI specification that can be considered as a very creative task. By also relying on OWL-Q, it supports the high-level specification of KPIs, closer to human conception, which is independent on any underlying implementation technology.

**GeoSpatial Linked Data Management:** Dr. Kritikos along with colleagues have developed a cloud-based geospatial linked data (LD) management system which is able to scale according to the current load. This system employs on top a LD-as-a-service SaaS which abstracts away from the peculiarities of different LD infrastructure implementations as well as the complexity of the LD publishing process while allows a full LD management functionality. It should be highlighted that this system is able to produce INSPIRE-compliant data specifications from the LD stored which can enable geospatial data providers to comply with the European INSPIRE directives (<http://inspire.jrc.ec.europa.eu>).

## Participation in Research Projects

- **ARION** European Project, Participated in the context of MSc Scholarship from ICS-FORTH / University of Crete. *Main duty:* develop a scientific workflow management system and an accompanying scientific workflow language. *Main Activities:* participated in project meetings and the deliverable writing. *Main results:* see main duty.
- **S-Cube** European Project, Participated in the context of PhD Scholarship from University of Crete and a Post-Doc at Politecnico di Milano. *Main duty:* develop a service quality model & provide techniques / algorithms to support service negotiation. *Main activities:* participated in project meetings, deliverable writing; was main editor of one deliverable. *Main results:* (a) book chapter and ACM Computing Surveys article, where was main author, concerning service quality modelling, meta-modelling and negotiation, (b) a cross-layer service quality model, (c) a negotiation-support semantic service framework.
- **InGeoClouds** European project, Participated as a Post-Doc Researcher in ICS-FORTH. *Main duty:* conduct research and development activities over linked data (LD) management. *Main activities:* participated in research & development activities as well as in project meetings, project reviews and writing of deliverables. *Main results:* LD management SaaS which abstracts away from data publishing complexity while offering novel functionality related to the capability to perform semantic geospatial queries as well

as exporting the LD data stored in an INSPIRE-compliant form. Integration of this SaaS into a cloud-based geospatial LD management system able to be scaled on-demand according to the current load.

- **PaaSage** European Project, Participated as a Post-Doc Researcher in ICS-FORTH. *Main duty:* co-lead WP related to the development of a meta-data-database (MDDb). *Main activities:* participated in research & development activities across multiple WPs (WP 2, 3, 4, 5) as well as in project meetings, project reviews and writing of many deliverables. Was main editor for three deliverables. *Main results:* CAMEL cloud application modelling language, security-enhanced MDDb, a KB-based service selection approach for cloud-based applications, and a security-based approach for cross-cloud application reconfiguration.
- **CloudSocket** European Project, Participated as a Researcher in ICS-FORTH. *Main duty:* co-lead Dissemination WP as well as a research-oriented task. *Main activities:* participated in research & development activities across two WPs (WP 3 & 4) as well as in project meetings, project reviews and writing of many deliverables. Was main editor for four deliverables. *Main results:* extensions to CAMEL language, semantic service discovery & selection system, semantic KPI analysis framework.
- **Melodic** European Project, Participated as external collaborator. *Main duty:* enhance CAMEL language and its editors with big-data awareness, provide support to deployment optimisation modelling and deployment reasoning tasks. *Main activities:* participates in research & development activities in the project, in project meetings as well as in the writing and internal reviewing of many deliverables. *Main results:* CAMEL extension on data modelling.
- **Unicorn** European Project, Participated via a Researcher in ICS-FORTH. *Main duty:* provide support for security configuration modelling & design and implementation of risk assessment framework. *Main activities:* participates in R&D activities and in the writing of deliverables.
- **Functionizer** Eurostars Project, Participates as external collaborator / consultant. *Main duty:* enhance CAMEL language to support the description of serverless applications, supply consultancy services on the project's research and development activities.

## Major Collaborations

1. Rafael Brundo Uriarte, 2 years, IMT School for Advanced Studies, SLA Modelling
2. Joerg Domaschka, Daniel Seybold, Frank Griesinger, 3 years, University of ULM, PaaSage, CloudSocket and Melodic European projects, cross-layer service monitoring and adaptation, CAMEL language development
3. Barbara Pernici, Pierluigi Plebani, Cinzia Cappiello, 2 years, Politecnico di Milano, S-Cube European project, quality modelling & meta-modelling, service negotiation. Performed one year post-doc in the team of Prof. Pernici in the context S-Cube.
4. Robert Woitch, 2 years, BOC, collaboration topics: KPI modelling and analysis.
5. Knut Hinkelmann and Emanuele Laurenzi, 1 year, FHNW, collaboration topics: Business Process as a Service Design
6. Andreas Metzger, 6 months, University of Essen, S-Cube European Project, quality modelling
7. Martin Treiber, 6 months, Vienna University of Technology, S-Cube European Project, (human and software) service quality modelling
8. Michael Parkin, 6 months, Tilburg University, S-Cube European project, service quality modelling/meta-modelling
9. Tom Kirkham, 3 years, STFC, PaaSage european project, cloud security / access control.

10. Bartosz Kryza, AGH, 2 years, PaaSage european project, cloud security / access control & CERIF-to-CAMEL mapping
11. Fabio Paterno, 1 year, CNR, ERCIM scholarship, task-based service selection.
12. Sylvain Kubicki, 1 year, CRP, ERCIM scholarship, business service design and composition
13. Ana Maria Juan Ferrer, Joaquin Iranzo Yuste, Roman Sosa Gonzalez, 2 years, ATOS, CloudSocket European Project & EC Intercloud Cluster, SLA modelling & cross-cloud research
14. Philippe Massonet, 3 years, CETIC, PaaSage European project, cloud security modelling and security-based cloud application adaptation.
15. Alessandro Rossini, Nikolay Nikolov, 3 years, SINTEF, PaaSage project, cloud application modelling and (EMF) model storage.
16. Franky Vanraes, BeWan, 1 year, PaaSage project, Tosca-to-CAMEL mapping.
17. Attila Kertesz, Gabor Geckskemeti, MTA-SZTAKI, S-Cube European Project, (cloud) service quality modelling
18. Kostas Magoutis, 5 years, PaaSage & Unicorn projects, ICS-FORTH, meta-data repository & modelling, knowledge-based IaaS selection

### **Organisation of Conferences/Workshops/Events**

1. 2020, ESOC, Heraklion, Crete, Greece, Conference Chair
2. 2018, ESOC, Como, Program Chair
3. 2017, BPM@Cloud Workshop at ESOC, Oslo, Workshop chair
4. 2015, Tutorial on CAMEL, SSAIE Summer School, Lecturer
5. 2010, Invited talk on Business Service Design, Politecnico di Milano, Lecturer
6. 2009, Invited talk on Non-Functional Service Discovery, SSAIE Summer School, Lecturer

### **Reviewing Activities**

- Reviewer for many highly prestigious journals (31 in total), including: Journal of Systems and Software, IEEE Transactions on Service Computing, IEEE Transactions on Cloud Computing, Future Generation Computing Systems, IEEE Transactions on Data and Knowledge Engineering, IEEE Transactions on Software Engineering, Service-Oriented Computing and Applications, IEEE Transactions on Computers, Journal of Knowledge Based Systems, ACM Transactions on the Web, ACM Computing Surveys, ACM Transactions on Interactive Intelligent Systems
- Reviewer for multiple conferences and workshops (74 in total), including ICWS, ICSC, CLOSER, WISE, ODBASE, ICWE, CloudCom, ER, CAISE, FiCloud, EICS, CHI

### **Reviewing Achievements**

- Member of Editorial Board of Elsevier's "Journal of Systems and Software"
- Member of Editorial Board of Elsevier's "Array" journal

- Top-7 reviewer for “Journal of Systems and Software” in last two years (<https://www.journals.elsevier.com/journal-of-systems-and-software/news/thank-you-to-the-jss-editorial-team-and-reviewers>)
- Program Committee Member in following conferences and workshops:
  - CLOSER 2019
  - ICTERI 2019
  - SSS-2019
  - IUI 2019
  - CLOSER 2018
  - ICTERI 2018
  - ICEI 2018
  - BigR-I 2018
  - FiCloud 2017
  - BigR-I 2017
  - SoCPaR 2015-2017
  - SOFSEM 2014-2015
  - NWESP 2005, 2007, 2010-2012
  - NaBIC 2011-2012, 2014-2015, 2017
  - IBICA 2015
  - ISDA 2014
  - CASoN 2012, 2016
  - CHI 2014 Work-in-Progress
  - IAS 2015-2016
  - ISIP 2014
  - AmI 2013
  - Web2Touch 2009

## Publications

### Journal Publications

1. Kyriakos Kritikos, Chrysostomos Zeginis, Joaquin Iranzo, Roman Sosa Gonzalez, Daniel Seybold, Frank Griesinger and Jörg Domaschka. Multi-Cloud Provisioning of Business Processes. *Journal of Cloud Computing* (2019).
2. Achilleas Achilleos, Kyriakos Kritikos, Alessandro Rossini, Georgia Kapitsaki, Jörg Domaschka, Michal Orzechowski, Daniel Seybold, Frank Griesinger, Nikolay Nikolov, Daniel Romero, and George Papadopoulos. 2019. The Cloud Application Modelling and Execution Language. *Journal of Cloud Computing* (2019).
3. Somnath Mazumdar, Daniel Seybold, Kyriakos Kritikos, Yannis Verginadis: A survey on data storage and placement methodologies for Cloud-Big Data ecosystem. *Journal of Big Data* (2019)
4. George Baryannis, Kyriakos Kritikos, Dimitris Plexousakis: A specification-based QoS-aware design framework for service-based applications. *Service Oriented Computing and Applications* 11(3): 301-314 (2017)
5. Kyriakos Kritikos, Tom Kirkham, Bartosz Kryza, Philippe Massonet: Towards a security-enhanced PaaS platform for multi-cloud applications. *Future Generation Comp. Syst.* 67: 206-226 (2017).
6. Constantino Thanos, Friederike Klan, Kyriakos Kritikos, Leonardo Candela: White Paper on Research Data Service Discoverability. *Publications* 5(1): 1 (2017)

7. Kyriakos Kritikos, Dimitris Plexousakis: Towards Semantic-Based Cloud Application Management: Services Transactions on Cloud Computing 3(3): 2015.
8. Chrysostomos Zeginis, Kyriakos Kritikos, Dimitris Plexousakis: Event Pattern Discovery in Multi-Cloud Service-Based Applications. IJSSOE 5(4): 78-103 (2015)
9. Kyriakos Kritikos, Yannis Rousakis, Dimitris Kotzinos: A Cloud-Based, Geospatial Linked Data Management System. Trans. Large-Scale Data- and Knowledge-Centered Systems 20: 59-89 (2015)
10. Kyriakos Kritikos, Dimitris Plexousakis, Fabio Paternò: Task model-driven realization of interactive application functionality through services. TiiS 3(4): 25:1-25:31 (2014)
11. Kyriakos Kritikos, Dimitris Plexousakis: Novel Optimal and Scalable Nonfunctional Service Matchmaking Techniques. IEEE Trans. Services Computing 7(4): 614-627 (2014)
12. Kyriakos Kritikos, Barbara Pernici, Pierluigi Plebani, Cinzia Cappiello, Marco Comuzzi, Salima Benbernou, Ivona Brandic, Attila Kertész, Michael Parkin, Manuel Carro: A survey on service quality description. ACM Comput. Surv. 46(1): 1:1-1:58 (2013)
13. Kyriakos Kritikos, Sylvain Kubicki, Eric Dubois: Goal-based business service composition. Service Oriented Computing and Applications 7(4): 231-257 (2013)
14. K. Kritikos and D. Plexousakis. Requirements for QoS-Based Web Service Description and Discovery. *IEEE Transactions on Services Computing*, 2, 4 (October-December 2009), 320-337.
15. K. Kritikos and D. Plexousakis. Mixed-Integer Programming for QoS-based Web Service Matchmaking. *IEEE Transactions on Services Computing*, 2, 2 (April-June 2009), 122-139.
16. Houstis, C., Lalis, S., Pitikakis, M., Vasilakis, G. V., Kritikos, K., and Smardas, A. 2003. A Grid Service-Based Infrastructure for Accessing Scientific Collections: The Case of the ARION System. *Int. J. High Perform. Comput. Appl.* 17, 3 (Aug. 2003), 269-280.

## Book Chapters

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Future Generation Computer Systems	3.997 <sup>TR</sup>
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