Spyros Lalis
Curriculum Vitae

CONTACT

Address	Electrical and Computer Engineering Dept.
	University of Thessaly
	Sekeri & Heiden Str, 38334 Volos, Greece
Telephone	+30 24210 74978, +30 6932 707277
e-mail	lalis@uth.gr

SHORT BIO

Spyros studied Computer Science (Informatics Engineering) at the Swiss Federal Institute of Technology Zurich (ETHZ) (1984-1989). He stayed at ETHZ, where he worked on his PhD at the Institute of Computer Systems with funding from the Swiss NSF (1989-1994).

After his PhD he returned to Greece for the obligatory 2-year military service (1995-1996). During that period, he worked at the Greek Navy Research Center, on wireless mobile data transmission and vehicle tracking using GPS and long-range RF communication technology.

He then moved to Heraklion as a Visiting Assistant Professor at the Computer Science Department of the University of Crete in Heraklion (1996-1999). In parallel, from 1997 to 2003, he worked in various R&D projects at the Foundation for Research and Technology Hellas (FORTH).

In 2000, Spyros was among the first to join the newly founded Electrical and Computer Engineering Department at the University of Thessaly in Volos, initially as a Visiting Assistant Professor, then as a tenure-track Assistant Professor, tenured Associate Professor and currently Full Professor. From the foundation of the Department to this date he is the main person responsible for the organization of the software track, and together with other colleagues founded the Computer Systems Laboratory (CSL). Also, from 2003-2016 he worked on several R&D projects at the Center for Research and Technology Hellas (CERTH).

During the transition from Heraklion to Volos, Spyros was actively involved in the creation of a startup, which was among the first to pursue the idea of an incubator in the Greek landscape, and subsequently gave life to a mobile marketing company with global business activity.

His research interests and activities are in the areas of programming environments, software engineering, operating and runtime systems, parallel and distributed systems, scientific meta-computing systems, mobile and ubiquitous/pervasive computing systems. Most of his work concerns system-near software and mechanisms, for which working system prototypes have been developed. He has published over 100 papers and articles in peer-reviewed book chapters, international journals and conferences. He has received funding from the highly competitive EC research programmes (FP6, FP7, H2020, Horizon Europe), including the prestigious Future and Emerging Technology (FET) Unit, and has significant experience in the technical management and coordination of R&D projects.

EDUCATION

1989 - 1994 PhD in Technical Sciences (Dr. Sc. Techn.)
Swiss Federal Institute of Technology Zurich (ETHZ)
Thesis title: "Hermes – Supporting Distributed Programming in a Network of Personal Workstations", supervisors: Prof. B. Sanders and Prof. N. Wirth.

1984 - 1989 Diploma in Informatics Engineering (Dipl. Inf. Ing.)
Swiss Federal Institute of Technology Zurich (ETHZ)
Thesis title: "Analysis and Implementation of a Multicast Protocol",
supervisor: Prof. B. Sanders.

ACADEMIC & RESEARCH EXPERIENCE

2020 - today Professor
Department of Electrical and Computer Engineering
University of Thessaly, Volos

2009 – 2020 Associate Professor
Department of Electrical and Computer Engineering
University of Thessaly, Volos

2003 - 2016 Adjunct Researcher
Institute for Research and Technology Thessaly
Center for Research and Technology Hellas (CERTH)

2002 - 2009 Assistant Professor (tenure 2006)
Department of Electrical and Computer Engineering
University of Thessaly, Volos

2000 - 2002 Visiting/Adjunct Assistant Professor
Department of Electrical and Computer Engineering
University of Thessaly, Volos

1997 - 2003 Adjunct Researcher
Institute for Computer Science
Foundation for Research and Technology Hellas (FORTH)

1997 - 1999 Visiting/Adjunct Assistant Professor
Department of Computer Science
University of Crete, Heraklion

INDUSTRIAL/BUSINESS EXPERIENCE

1999 - 2003 Co-founder of O2B and technology consultant in Upstream.

MILITARY SERVICE

1995 - 1996 Office for Research & Technological Development, Greek Navy.

RESEARCH AREAS

o System-near software/mechanisms for standalone and distributed computer systems.
o Meta-computing for scientific applications.
o Market-based resource/task allocation.
o Computing and sensing with wearable/personal devices.
o Wireless sensor & actuator networks, and unmanned vehicles.
o Placement and migration algorithms.
o Computing with reprogrammable and heterogeneous platforms.
o Energy-efficient and significance-aware computing.

PUBLICATIONS

Book Chapters

B7. G. Polychronis and S. Lalis, "Scheduling Offloading Decisions for Heterogeneous Drones on Shared Edge Resources", *Device-Edge-Cloud Continuum: Paradigms, Architectures and Applications*, C. Savaglio, G. Fortino, M. Zhou, J. Ma (eds), Internet of Things Series, Springer, 2023.

B6. P. Koutsovasilis, C. Kalogirou, K. Parasyris, C. D. Antonopoulos, N. Bellas and S. Lalis, "Exploiting Reduced Voltage Margins: From Node- to the Datacenter-level", *Computing at the EDGE, New Challenges for Service Provision*, G. Karakonstantis and C. J. Gillan (eds), Springer, 2022.

B5. G. Polychronis and S. Lalis, "Dynamic Vehicle Routing Under Uncertain Energy Consumption and Energy Gain Opportunities", *Smart Cities, Green Technologies and Intelligent Transport Systems*, M. Helfert, C. Klein, B. Donnellan, O. Gusikhin (eds), Communications in Computer and Information Science Series, Springer, 2019.

B4. T. Fronimos, M. Koutsoubelias, S. Lalis and T. Bartzanas, "A Service-Based Approach for the Uniform Access of Wireless Sensor Networks and Custom Application Tasks Running on Sensor Nodes", *Integration, Interconnection, and Interoperability of IoT Systems*, R Gravina, C. E. Palau, M. Manso, A. Liotta and G. Fortino (eds), Internet of Things Series, Springer, 2017.

B3. S. Lalis, A. Savidis, A. Karypidis, J. Gutknecht and C. Stephanides, "Towards Dynamic and Cooperative Multi-device Personal Computing", *The Disappearing Computer*, N. Streitz, A. Kameas and I. Mavrommati (eds), Lecture Notes in Computer Science, vol. 4500, Springer, 2007.

B2. C. Houstis, S. Lalis, E. Vavalis, M. Pitikakis and G. Vasilakis, "An Advanced Middleware for e-Science Applied to Environmental Integrated Systems", *Information Systems for Sustainable Development*, Idea Group Publishing, 2005.

B1. N. M. Patrikalakis, J. J. McCarthy, A. R. Robinson, H. Schmidt, C. Evangelinos, P. J. Haley, S. Lalis, P. F. J. Lermusiaux, R. Tian, W. G. Leslie, and W. Cho, "Towards a Dynamic Data Driven System for Rapid Adaptive Interdisciplinary Ocean Forecasting", *Dynamic Data-Driven Application Systems*, Kluwer Academic Publishers, 2004.

Articles in International Journals and Magazines

J25. M. R. Gkeka, A. Patras, N. Tavoularis, S. Piperakis, E. Hourdakis, P. Trahanias, C. D. Antonopoulos, S. Lalis, N. Bellas, "Reconfigurable System-on-Chip Architectures for Robust Visual SLAM on Humanoid Robots", *ACM Transactions on Embedded Computing Systems (TECS)*. (accepted, to be published)

J24. P. Koutsovasilis, C. D. Antonopoulos, N. Bellas, S. Lalis, G. Papadimitriou, A. Chatzidimitriou and D. Gizopoulos, "The Impact of CPU Voltage Margins on Power-Constrained Execution", *IEEE Transactions on Sustainable Computing (TSUSC)*, vol. 7, January-March 2022.

J23. D. Kosmanos, D. Karagiannis, A. Argyriou, S. Lalis and L. Maglaras, "RF Jamming Classification Using Relative Speed Estimation in Vehicular Wireless Networks", *Security and Communication Networks*, vol. 2021, article nr. 9959310, Hindawi, August 2021.

J22. P. Koutsovasilis, K. Parasyris, C. D. Antonopoulos, N. Bellas and S. Lalis, "Dynamic Undervolting to Improve Energy Efficiency on Multicore X86 CPUs", *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 31(12), December 2020.

J21.   N. Tziritas, S. U. Khan, T. Loukopoulos, <u>S. Lalis</u>, C.-Z. Xu, K. Li and A. Y. Zomaya, "Online Inter-Datacenter Service Migrations", *IEEE Transactions on Cloud Computing*, 8(4), October-December 2020.

J20.   K. Parasyris, V. Vassiliadis, C. D. Antonopoulos, <u>S. Lalis</u> and N. Bellas, "Significance-aware Program Execution on Unreliable Hardware", *ACM Transactions on Architecture and Code Optimization (TACO)*, 14(2), February 2017.

J19.   V. Vassiliadis, K. Parasyris, C. Chalios, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, H. Vandierendonck and D. S. Nikolopoulos, "Exploiting Significance of Computations for Energy-Constrained Approximate Computing", *International Journal of Parallel Programming*, Springer, 44(5), October 2016.

J18.   T. Tajmajer, <u>S. Lalis</u>, M. Koutsoubelias, A. Pruszkowski, J. Domaszewicz, M. Nati and A. Gluhak, "Node/Proxy Portability: Designing for the Two Lives of your Next WSAN Middleware", *Journal of Systems and Software*, Elsevier, vol. 117, July 2016.

J17.   M. Koutsoubelias, N. Grigoropoulos, <u>S. Lalis</u>, P. Lampsas, S. Katsikas and D. Dimas, "System Support for the In Situ Testing of Wireless Sensor Networks via Programmable Virtual Onboard Sensors", *IEEE Transactions on Instrumentation and Measurement*, 65(4), April 2016.

J16.   J. Domaszewicz, <u>S. Lalis</u>, A. Pruszkowski, M. Koutsoubelias, T. Tajmajer, N.Grigoropoulos, M. Nati and A. Gluhak, "Soft Actuation: Smart Home and Office with Human-in-the-Loop", *IEEE Pervasive Computing Magazine*, January-March 2016.

J15.   M. Nati, A. Gluhak, J. Domaszewicz, <u>S. Lalis</u> and K. Moessner, "Lessons from SmartCampus: Non-native Experimenting with User-centric Internet-of-Things Testbed", *Wireless Personal Communications*, Springer, December 2014.

J14.   N. Tziritas, S. U. Khan, T. Loukopoulos, <u>S. Lalis</u>, C. Xu and P. Lampsas, "Single and Group Agent Migration: Algorithms, Bounds and Optimality Issues", *IEEE Transactions on Computers*, 63(12), 2014.

J13.   D. Nikolopoulos, H. Vandierendonck, N. Bellas, C. Antonopoulos, <u>S. Lalis</u>, G. Karakonstantis, A. Burg and U. Naumann, "Energy Efficiency through Significance-Based Computing", *IEEE Computer*, 47(7), 2014. Short communication, invited.

J12.   N. Tziritas, S. U. Khan, C. Xu, T. Loukopoulos and <u>S. Lalis</u>, "On Minimizing the Resource Consumption of Cloud Applications Using Process Migrations", *Journal of Parallel and Distributed Computing*, Elsevier, 73(12), 2013.

J11.   N. Tziritas, <u>S. Lalis</u>, S. U. Khan, T. Loukopoulos, C.-Z. Xu and P. Lampsas, "Distributed Online Algorithms for the Agent Migration Problem in WSNs", *Mobile Networks and Applications*, ACM/Springer, 18(5), 2013.

J10.   J. Domaszewicz, <u>S. Lalis</u>, T. Paczesny, A. Pruszkowski and M. Ala-Louko, "Graspable and Resource-Flexible Applications for Pervasive Computing at Home", *IEEE Communications Magazine*, 51(6), IEEE, 2013.

J9.   N. Tziritas, T. Loukopoulos, <u>S. Lalis</u> and P. Lampsas, "Algorithms for Energy-Driven Agent Placement in Wireless Embedded Systems with Memory Constraints", *Simulation Modelling Practice and Theory*, 19(6), Elsevier, 2011.

J8.   A. Karypidis and <u>S. Lalis</u>, "OmniStore: Automating Data Management in a Personal System Comprising Several Portable Devices", *Pervasive and Mobile Computing*, 3(5), Elsevier, 2007.

J7.   A. Karypidis and <u>S. Lalis</u>, "Automated Context Aggregation and File Annotation for PAN-based Computing", *Personal and Ubiquitous Computing*, 11(1), Springer, 2005.

J6.   S. Lalis, A. Karypidis and A. Savidis, "Ad-Hoc Composition in Wearable and Mobile Computing", *Communications of the ACM*, 48(3), 2005. Short communication, invited.

J5.   C. Houstis, S. Lalis, M. Pitikakis, G. Vasilakis, K. Kritikos and A. Smardas, "A Grid Service-based Infrastructure for Accessing Scientific Collections: The Case of the ARION System", *International Journal of High Performance Computing Applications*, 17(3), SAGE, 2003.

J4.   C. Houstis, H. Tsalapata and S. Lalis, "An Environmental Information Metadata Architecture for the THETIS Distributed Coastal Zone Management System", *Systems Analysis Modeling and Simulation*, special issue, I. Herlin (ed.), Gordon and Breach Science Publishers, 2001.

J3.   S. Lalis, D. Papadakis and M. Marazakis, "Decentralized Resource Acquisition from Autonomous Markets in a QoS-capable Environment", *Decision Support Systems*, 28, 2000, Elsevier Science.

J2.   C. Houstis, C. Nikolau, S. Lalis, S. Kapidakis, C. Christophides, E. Simon and A. Thomasic, "Towards a Next Generation of Open Scientific Data Repositories and Services", *CWI Quarterly*, special issue, 12(2), 1999.

J1.   S. Lalis and B. Sanders, "From Persistent Objects to Object Transmission in Distributed Systems using Oberon", *Software-Concepts and Tools*, 16, 1995.

Articles in International Conferences and Workshops

C100. S.-F. Pournaropoulos, C. D. Antonopoulos and S. Lalis, "Supporting the Adaptive Deployment of Modular Applications in Cloud-Edge-Mobile Systems", *International Conference on Embedded Wireless Systems and Networks (EWSN)*, September 2023 (accepted, to appear)

C99. T. Aslanidis, M. Koutsoubelias and S. Lalis, "Transparent Handover of Automated Drone Missions between Edge-based Control Stations", short paper, *International Conference on Embedded Wireless Systems and Networks (EWSN)*, September 2023 (accepted, to appear)

C98. A. Patras, F. Pournaropoulos, N. Bellas, C. D. Antonopoulos, S. Lalis, M. Goutha and A. Nanos, "A Minimal Testbed for Experimenting with Flexible Resource and Application Management in Heterogeneous Edge-Cloud Systems", *International Workshop on Machine Learning for Autonomic System Operation in the Device-Edge-Cloud Continuum (MLSysOps)*, *International Conference on Embedded Wireless Systems and Networks (EWSN)*, September 2023 (accepted, to appear)

C97. M. Loaiza, D. Chatzopoulos, C. Savaglio, R. Gravina and S. Lalis, "Agents in the computing continuum: the MLSysOps perspective", *International Workshop on Machine Learning for Autonomic System Operation in the Device-Edge-Cloud Continuum (MLSysOps)*, *International Conference on Embedded Wireless Systems and Networks (EWSN)*, September 2023 (accepted, to appear)

C96. G. Polychronis and S. Lalis, "Flexible Computation Offloading at the Edge for Autonomous Drones with Uncertain Flight Times", *International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT)*, June 2023.

C95. G. Polychronis and S. Lalis, "Joint Edge Resource Allocation and Path Planning for Drones with Energy Constraints", *International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (Mobiquitous)*, November 2022. (accepted, to appear)

C94. I.-M. Panagou, M.-R. Gkeka, A. Patras, S. Lalis, C. D. Antonopoulos and N. Bellas, "FPGA Roofline modeling and its Application to Visual SLAM", short paper,

International Conference on Field Programmable Logic and Applications (FPL), August-September 2022.

C93. G. Polychronis and S. Lalis, "Planning Computation Offloading on Shared Edge Infrastructure for Multiple Drones", *International Workshop on Wireless Sensor, Robot and UAV Networks (WiSARN)*, *IEEE International Conference on Distributed Computing Systems (ICDCS)*, July 2022.

C92. C. Pappas, D. Papadopoulos, D. Chatzopoulos, E. Panagou, S. Lalis and M. Vavalis, "Towards Efficient Decentralized Federated Learning", *Workshop on Decentralized Internet, Networks, Protocols, and Systems (DINPS)*, *IEEE International Conference on Distributed Computing Systems (ICDCS)*, July 2022.

C91. J. Tirana, C. Pappas, D. Chatzopoulos, S. Lalis and M. Vavalis, "The role of compute nodes in privacy-aware decentralized AI", *International Workshop on Embedded and Mobile Deep Learning (EMDL), ACM Annual International Conference on Mobile Systems, Applications and Services (MobiSys)*, July 2022. (invited paper)

C90. N. Grigoropoulos and S. Lalis, "Fractus: Orchestration of Distributed Applications in the Drone-Edge-Cloud Continuum", *IEEE Computers, Software, and Applications Conference (COMPSAC)*, June 2022.

C89. C. Kalogirou, C. D. Antonopoulos, S. Lalis and N. Bellas, "Dynamic Management of CPU Resources Towards Energy Efficient and Profitable Datacentre Operation", *Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, June 2022.

C88. M. Koutsoubelias, N. Grigoropoulos, G. Polychronis, G. Badakis and S. Lalis, "System Architecture for Autonomous Drone-based Remote Sensing", *International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (Mobiquitous)*, November 2021.

C87. G. Polychronis and S. Lalis, "Safe Optimistic Path Planning for Autonomous Drones under Dynamic Energy Costs", *IEEE International Conference on Intelligent Transportation Systems (ITSC)*, September 2021.

C86. G. Badakis, M. Koutsoubelias and S. Lalis, "Robust Precision Landing for Autonomous Drones Combining Vision-based and Infrared Sensors", *IEEE Sensors Applications Symposium (SAS)*, August 2021.

C85. C. Pappas, D. Chatzopoulos, S. Lalis and M. Vavalis, "IPLS: A Framework for Decentralized Federated Learning", *Workshop on Decentralising the Internet with IPFS and Filecoin (DI2F)*, *IFIP Networking Conference*, June 2021.

C84. E. Maroudas, C. D. Antonopoulos, N. Bellas and S. Lalis, "Exploring the Potential of Context-Aware Dynamic CPU Undervolting", *ACM International Conference on Computing Frontiers (CF)*, May 2021.

C83. T. Kasidakis, G. Polychronis, M. Koutsoubelias and S. Lalis, "Reducing the Mission Time of Drone Applications through Location-Aware Edge Computing", *IEEE International Conference on Fog and Edge Computing (ICFEC)*, May 2021.

C82. M. R. Gkeka, A. Patras, C. D. Antonopoulos, S. Lalis and N. Bellas, "FPGA Architectures for Approximate Dense SLAM Computing", *Design, Automation and Test in Europe Conference (DATE)*, February 2021.

C81. N. Grigoropoulos and S. Lalis, "Simulation and Digital Twin Support for Managed Drone Applications", *IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications (DS-RT)*, September 2020.

C80. G. Polychronis and <u>S. Lalis</u>, "Dynamic Multiple Vehicle Routing under Energy Capacity Constraints", *IEEE International Conference on Intelligent Transportation Systems (ITSC)*, September 2020.

C79. N. Grigoropoulos and <u>S. Lalis</u>, "Flexible Deployment and Enforcement of Flight and Privacy Restrictions for Drone Applications", *International Workshop on Safety and Security of Intelligent Vehicles (SSIV)*, *IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, June 2020.

C78. C. Kalogirou, C. D. Antonopoulos, N. Bellas, <u>S. Lalis</u>, L. Mukhanov and G. Karakonstantis, "Increasing the Profit of Cloud Providers through DRAM Operation at Reduced Margins", *IEEE/ACM International Symposium in Cluster, Cloud, and Grid Computing (CCGrid)*, May 2020.

C77. N. Grigoropoulos, M. Koutsoubelias and <u>S. Lalis</u>, Byzantine Fault Tolerance for Centrally Coordinated Missions with Unmanned Vehicles, *ACM International Conference on Computing Frontiers (CF)*, May 2020.

C76. G. Polychronis and <u>S. Lalis</u>, Tournament Selection Algorithm for the Multiple Travelling Salesman Problem, *International Conference on Vehicle Technology and Intelligent Transport Systems (VEHITS)*, May 2020.

C75. N. Grigoropoulos, M. Koutsoubelias and <u>S. Lalis</u>, "Active Replication for Centrally Coordinated Teams of Autonomous Vehicles", *IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS)*, June 2019.

C74. C. Kalogirou, P. Koutsovasilis, C. D. Antonopoulos, N. Bellas, <u>S. Lalis</u>, S. Venugopal and C. Pinto, "Exploiting CPU Voltage Margins to Increase the Profit of Cloud Infrastructure Providers", *IEEE/ACM International Symposium in Cluster, Cloud, and Grid Computing (CCGrid)*, May 2019.

C73. G. Polychronis and <u>S. Lalis</u>, "Dynamic Vehicle Routing under Uncertain Travel Costs and Refueling Opportunities", *International Conference on Vehicle Technology and Intelligent Transport Systems (VEHITS)*, May 2019.

C72. K. Parasyris, P. Koutsovasilis, V. Vassiliadis, C. D. Antonopoulos, N. Bellas and <u>S. Lalis</u>, "A Framework for Evaluating Software on Reduced Margins Hardware", *IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, June 2018.

C71. K. Parasyris, N. Bellas, C. D. Antonopoulos and <u>S. Lalis</u>, "Exploring the Effects of Code Optimizations on CPU Frequency Margins", *International Workshop on Approximate and Transprecision Computing on Emerging Technologies (ATCET)*, *International Supercomputing Conference (ICS)*, June 2018.

C70. M. Koutsoubelias and <u>S. Lalis</u>, "Fault-Tolerance Support for Mobile Robotic Applications", *IEEE International Symposium on Industrial Embedded Systems (SIES)*, June 2018.

C69. G. Karakonstantis, K. Tovletoglou, L. Mukhanov, H. Vandierendonck, D. Nikolopoulos, P. Lawthers, P. Koutsovasilis, M. Maroudas, C. D. Antonopoulos, C. Kalogirou, N. Bellas, <u>S. Lalis</u>, S. Venugopal, A. Prat-Perez, A. Lampropulos, M. Kleanthous, A. Diavastos, Z. Hadjilambrou, P. Nikolaou, Y. Sazeides, P. Trancoso, G. Papadimitriou, M. Kaliorakis, A. Chatzidimitriou, D. Gizopoulos and S. Das, "An Energy-efficient and Error-resilient Server Ecosystem Exceeding Conservative Scaling Limits", *International Conference on Design, Automation and Test in Europe (DATE)*, March 2018.

C68. M. Koutsoubelias, A. Argyriou and <u>S. Lalis</u>, "Scalable and Adaptive Polling Protocol for Concurrent Wireless Sensor Data Flows", *International Workshop on Mobile and

Pervasive Internet of Things, IEEE International Conference on Pervasive Computing and Communications (PerCom), March 2018.

C67. M. Koutsoubelias, A. Grigoropoulos and <u>S. Lalis</u>, "A Modular Simulation Environment for Multiple UAVs with Virtual WiFi and Sensing Capability", *IEEE Sensors Applications Symposium (SAS)*, March 2018.

C66. C. Kalogirou, P. Koutsovasilis, M. Maroudas, C. D. Antonopoulos, <u>S. Lalis</u> and N. Bellas, "Edge and Cloud Provider Cost Minimization by Exploiting Extended Voltage and Frequency Margins", *International Conference on Parallel Computing (PARCO)*, September 2017. Advances in Parallel Computing, vol. 32, IOS.

C65. A. Patras, <u>S. Lalis</u> and C. D. Antonopoulos, "Flexible Distributed Computing Across End-Devices, the Edge and the Cloud", *International Conference on Parallel Computing (PARCO)*, September 2017. Advances in Parallel Computing, vol. 32, IOS.

C64. A. Santogidis and <u>S. Lalis</u>, "High-throughput Sockets over RDMA for the Intel Xeon Phi Coprocessor", *International Workshop on Communication Architectures for HPC, Big Data, Deep Learning and Clouds at Extreme Scale (ExaComm)*, *International Supercomputing Conference (ICS)*, June 2017. Lecture Notes in Computer Science, vol. 10524, Springer.

C63. M. Koutsoubelias, A. Grigoropoulos and <u>S. Lalis</u>, "Virtual Sensor Services for Simulated Mobile Nodes", *IEEE Sensors Applications Symposium (SAS)*, March 2017.

C62. M. Katsomallos, <u>S. Lalis</u>, T. Papaioannou and G. Theodorakopoulos, "An Open Framework for Flexible Plug-in Privacy Mechanisms in Crowdsensing Applications", *International Workshop on Crowd Assisted Sensing, Pervasive Systems and Communications*, *IEEE International Conference on Pervasive Computing and Communications (PerCom)*, March 2017.

C61. M. Koutsoubelias and <u>S. Lalis</u>, "Coordinated Broadcast-based Request-Reply and Group Management for Tightly-Coupled Wireless Systems", *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, December 2016.

C60. M. Koutsoubelias and <u>S. Lalis</u>, "TeCoLa: A Programming Framework for Dynamic and Heterogeneous Robotic Teams", *International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (Mobiquitous)*, November 2016.

C59. T. Fronimos, <u>S. Lalis</u>, M. Koutsoubelias and T. Bartzanas, "Unified Service-oriented Access for WSNs and Dynamically Deployed Application Tasks", *International Workshop on Interoperability, Integration, and Interconnection of Internet of Things Systems (I4T)*, *IEEE International Conference on Internet-of-Things Design and Implementation (IoTDI)*, April 2016.

C58. V. Vasiliadis, J. Riehme, K. Parasyris, J. Deussen, C. Antonopoulos, N. Bellas, <u>S. Lalis</u> and U. Nauman, "Towards Automatic Significance Analysis for Approximate Computing", *International Symposium on Code Generation and Optimization (CGO)*, March 2016.

C57. N. Tziritas, T. Loukopoulos, <u>S. Lalis</u>, S. Ullah Khan and C.-Z. Xu, "Coordination Strategies for Agent Migrations in Wireless Sensor Networks", *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, December 2015.

C56. M. Koutsoubelias and <u>S. Lalis</u>, "Flow-Control Policies for Wireless Sequencer-based Causal and Total Order Communication", *IEEE International Conference on Cyber, Physical and Social Computing (CPSCom)*, December 2015.

C55. N. Grigoropoulos, <u>S. Lalis</u> and M. Koutsoubelias, "An Event-based Framework for the Specification and Runtime Checking of Timing Constraints in Wireless Sensor and Actuator Networks", *IEEE International Conference on Cyber, Physical and Social Computing (CPSCom)*, December 2015.

C54. V. Vassiliadis, K. Parasyris, C. Chalios, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, H. Vandierendonck and D. S. Nikolopoulos, "A Significance-Driven Programming Framework for Energy-Constrained Approximate Computing", *ACM International Conference on Computing Frontiers*, May 2015.

C53. M. Koutsoubelias, <u>S. Lalis</u>, P. Lampsas, A. Grigoropoulos, S. Katsikas and D. Dimas, "Scriptable Virtual Onboard Sensors for Conducting Post-Deployment Drills in Wireless Sensor Networks", *IEEE Sensors Applications Symposium (SAS)*, April 2015.

C52. G. Kazdaridis, D. Stavropoulos, V. Maglogiannis, T. Korakis, <u>S. Lalis</u> and L, Tassiulas, "NITOS BikesNet: Enabling Mobile Sensing Experiments through the OMF Framework in a City-wide Environment", *IEEE International Conference on Mobile Data Management (MDM)*, July 2014.

C51. G. Georgakoudis, D. S. Nikolopoulos, H. Vandierendonck and <u>S. Lalis</u>, "Fast Dynamic Binary Rewriting for Flexible Thread Migration on Shared-ISA Heterogeneous MPSoCs", *International Conference on Embedded Computer Systems: Architectures, Modeling and Simulation (IC-SAMOS)*, July 2014.

C50. M. Katsomallos and <u>S. Lalis</u>, "EasyHarvest: Supporting the Deployment and Management of Sensing Applications on Smartphones", *International Workshop on Crowdsensing Methods, Techniques and Applications, IEEE International Conference on Pervasive Computing and Communications (PerCom)*, March 2014.

C49. M. Koutsoubelias and <u>S. Lalis</u>, "P/S Sockets: Supporting Publish/Subscribe Communication through the Standard Socket API", *Workshop on Middleware for Next Generation Internet Computing, ACM/IFIFP International Middleware Conference 2013 (Middleware)*, December 2013.

C48. J. Domaszewicz and <u>S. Lalis</u>, "Soft Actuation for Home and Office", *International Conference on Intelligent Environments (IE)*, July 2013.

C47. G. Georgakoudis, D. S. Nikolopoulos and <u>S. Lalis</u>, "Fast Dynamic Binary Rewriting to Support Thread Migration in Shared-ISA Asymmetric Multicores", *International Workshop on Code Optimization for Multi and Many Cores, ACM International Symposium on Code Generation and Optimization (CGO)*, February 2013.

C46. I. Rentifis, N. Tziritas, P. Lampsas, <u>S. Lalis</u> and T. Loukopoulos, "Improving Application Availability in Wireless Sensor Networks with Energy-Harvesting Capability", *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, December 2012.

C45. N. Tziritas, P. Lampsas, <u>S. Lalis</u>, T. Loukopoulos, S. Khan and C.-Z. Xu, "Introducing Agent Evictions to Improve Application Placement in Wireless Distributed Systems", *International Conference on Parallel Processing (ICPP)*, September 2012.

C44. N. Tziritas, G. Georgakoudis, <u>S. Lalis</u>, J. Domaszewicz , T. Paczesny, P. Lampsas and T. Loukopoulos, "Middleware Mechanisms for Agent Mobility in Wireless Sensor and Actuator Networks", *International Conference on Sensor Systems and Software (SCUBE)*, June 2012. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol. 102 Springer.

C43. N. Tziritas, T. Loukopoulos, <u>S. Lalis</u> and P. Lampsas, "GRAL: A Grouping Algorithm to Optimize Application Placement in Wireless Embedded Systems", *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, May 2011.

C42. <u>S. Lalis</u>, J. Domaszewicz, A. Pruszkowski, T. Paczesny, M. Ala-Louko, M. Taumberger, G. Georgakoudis and K. Lekkas, "Tangible Applications for Regular Objects: An End-User Model for Pervasive Computing at Home", *International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMP)*, October 2010.

C41. N. Tziritas, T. Loukopoulos, <u>S. Lalis</u> and P. Lampsas, "Deploying Tree-Structured Agent Applications in Networked Embedded Systems", *International European Conference on Parallel* and Distributed *Computing (Euro-Par)*, August 2010.

C40. A. Fevgas, P. Tsompanopoulou and <u>S. Lalis</u>, "Rapid Prototype Development for Studying Human Activity", *Mediterranean Conference on Medical and Biological Engineering and Computing (MediCon)*, May 2010. IFMBE Proc., vol. 29, Springer.

C39. N. Tziritas, T. Loukopoulos, <u>S. Lalis</u> and P. Lampsas, "Agent Placement in Wireless Embedded Systems: Memory Space and Energy Optimizations", *International Workshop on Performance Modeling, Evaluation, and Optimization of Ubiquitous Computing and Networked Systems*, *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, April 2010.

C38. L. Pappas and <u>S. Lalis</u>, "Area-Based Overlay Architecture for Scalable Integration of Sensor Networks", *International Conference on Ad Hoc Networks (AdHocNets)*, September 2009. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol. 28, Springer.

C37 P. Tarvainen, M. Ala-Louko, M. Jaakola, I. Uusitalo, <u>S. Lalis</u>, T. Paczesny, M. Taumberger and P. Savolainen, "Towards a Lightweight Security Solution for User-Friendly Management of Distributed Sensor Networks", *Conference on Smart Spaces*, St. September 2009. Lecture Notes in Computer Science, vol. 5764, Springer.

C36. D. Syrivelis and <u>S. Lalis</u>, "Supporting Multitasking of Pipelined Computations on Embedded Parallel Processor Arrays", *International Symposium on Embedded Multicore Systems-on-Chip*, *International Symposium on Embedded Multicore Systems-on-Chip*, *International Conference on Parallel Processing (ICPP)*, September 2009.

C35. N. Tziritas, T. Loukopoulos, P. Lampsas and <u>S. Lalis</u>, "Using Multicast Transfers in the Replica Migration Problem: Formulation and Scheduling Heuristics", *International European Conference on Parallel* and Distributed *Computing (Euro-Par)*, August 2009. Lecture Notes in Computer Science, vol. 5704, Springer.

C34. D. Syrivelis and <u>S. Lalis</u>, "PipeIt: A Pipeline Programming Framework for Embedded Processor Array Systems-on-Chip", *International Conference on Embedded Systems and Applications*, July 2009.

C33. D. Syrivelis and <u>S. Lalis</u>, "Extracting Coarse-Grained Pipelined Parallelism out of Sequential Applications for Parallel Processor Arrays", *International Conference on Architecture of Computing Systems (ARCS)*, March 2009. Lecture Notes in Computer Science, vol. 5455, Springer.

C32. N. Tziritas, T. Loukopoulos, P. Lampsas and <u>S. Lalis</u>, "Formal Model and Scheduling Heuristics for the Replica Migration Problem", *International European Conference on Parallel* and Distributed *Computing (Euro-Par)*, August 2008. Lecture Notes in Computer Science, vol. 5168, Springer.

C31. F. J Ballesteros, P. de las Heras, E. Soriano and <u>S. Lalis</u>, "The Octopus: Towards Building Distributed Smart Spaces by Centralizing Everything", *International Symposium on Ubiquitous Computing and Ambient Intelligence (UCAMI)*, September 2007.

C30. M. Koutsoubelias and <u>S. Lalis</u>, "Design and Implementation of an Extensible Architecture for the Efficient Remote Access of Simple RFID-Readers", *IEEE International Symposium on Personal Indoor and Mobile Radio Communications (PIMRC)*, September 2007.

C29. D. Syrivelis and <u>S. Lalis</u>, "Design and Evaluation of a Software Infrastructure for the Runtime Management of Reconfigurable Resources", *International Conference on Engineering of Reconfigurable Systems and Algorithms*, June 2007.

C28. T. Loukopoulos, N. Tziritas, P. Lampsas and <u>S. Lalis</u>, "Implementing Replica Placements: Feasibility and Cost Minimization", *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, March 2007.

C27. T. Loukopoulos, N. Tziritas, P. Lampsas and <u>S. Lalis</u>, "Investigating the Replica Transfer Scheduling Problem", *IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS)*, November 2006.

C26. D. Syrivelis and <u>S. Lalis</u>, "System- and Application-level Support for Runtime Hardware Reconfiguration on SoC Platforms", *USENIX Technical Conference*, June 2006.

C25. A. Karypidis and <u>S. Lalis</u>, "Omnistore: A System for Ubiquitous Personal Storage Management", *IEEE International Conference on Pervasive Computing and Communications (PerCom)*, May 2006.

C24. A. Karypidis and <u>S. Lalis</u>, "Exploiting Colocation History for Efficient Service Selection in Ubiquitous Computing Systems", *International Conference on Mobile and Ubiquitous Systems (Mobiquitous)*, July 2005.

C23. <u>S. Lalis</u>, C. Houstis, M. Pitikakis, G. Vasilakis and M. Vavalis, "Providing Support for Integrated Scientific Computing: Metacomputing Meets the Grid and the Semantic Web", *IEEE International Symposium on Cluster Computing and the Grid (CCGrid)*, May 2005.

C22. A. Karypidis and <u>S. Lalis</u>, "Context-based Storage Management for Wearable and Portable Personal Devices", *International Conference on Architecture of Computer Systems (ARCS)*, March 2005. Lecture Notes in Computer Science, vol. 3432, Springer.

C21. N. Tsarbopoulos, Y. Kalavros and <u>S. Lalis</u>, "A Low-Cost and Simple-to-Deploy Peer-to-Peer Wireless Network based on Open-Source Wireless Routers", *International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (TRIDENTCOM)*, February 2005.

C20. G. Kakarontzas and <u>S. Lalis</u>, "Dependable Global Computing with JaWS++", *European Across Grids Conference (AxGrids)*, January 2004. *Lecture Notes in Computer Science*, vol. 3165, Springer.

C19. <u>S. Lalis</u>, A. Karypidis, A. Savidis and C. Stephanidis, "Runtime Support for a Dynamically Composable and Adaptive Wearable System", short paper, *IEEE International Symposium on Wearable Computing (ISWC)*, October 2003.

C18. <u>S. Lalis</u>, "Discovery in a Dynamically Composable Personal System", *International Conference on Universal Access in Human-Computer Interaction*, June 2003.

C17. C. Houstis, <u>S. Lalis</u>, V.Christophides, D. Plexousakis, E. Vavalis, M. Pitikakis, K. Kritikos and A. Smardas, "A Data, Computation and Knowledge Grid: the Case of the ARION System", *International Conference on Enterprise Information Systems (ICEIS)*, April 2003.

C16. A. Karypidis and <u>S. Lalis</u>, "The Tangible File System", *International Workshop on Smart Appliances and Wearable Computing*, *IEEE International Conference on Distributed Computing Systems (ICDS)*, May 2003.

C15. A. Karypidis and <u>S. Lalis</u>, "Harnessing the Potential of Mobile Personal Data Repositories", *Hawaii International Conference on System Sciences (HICSS)*, January 2003.

C14. C. Houstis, <u>S. Lalis</u>, V.Christophides, D. Plexousakis, E. Vavalis, M. Pitikakis, K. Kritikos, A. Smardas and Ch. Gikas, "A Service Infrastructure for e-Science: the Case of the ARION System", *Workshop on Web Services, E-Business, and the Semantic Web*, *International Conference on Advanced Information Systems Engineering (CAiSE)*, May 2002. Lecture Notes in Computer Science, vol. 2512, Springer.

C13. G. Kakarontzas and <u>S. Lalis</u>, "A Market-based Protocol with Leasing Support for Globally Distributed Computing", *International Workshop on Global Computing Using Personal Devices*, *ACM/IEEE International Symposium on Cluster Computing and the Grid (CCGrid)*, May 2001.

C12. G. Messaritakis, G. Zaharioudakis and <u>S. Lalis</u>, "MapEditor: A Framework for Manipulating Spatial Objects on the WWW", *Internet GIS mini-conference*, *Annual GIS Conference*, February 2001.

C11. <u>S. Lalis</u> and A. Karipidis, "JaWS: An Open Market-Based Framework for Distributed Computing over the Internet", *International IEEE/ACM Workshop on Grid Computing*, *International Conference on High Performance Computing (SC)*, December 2000. Lecture Notes in Computer Science, vol. 1971, Springer.

C10. E. Houstis, A. Catlin, N. Dhanjani, G. Balakrishnan, G. Park, J. Rice, <u>S. Lalis</u>, M. Stamatogiannakis and C. Houstis, "Network-based Scientific Computing", *IFIP Working Conference on Software Architectures for Scientific Computing Applications*, October 2000. *The Architectures for Scientific Software*, Ronald F. Boisvert and Pink Tak Peter Tang (eds.), Kluwer Academic Publishers, 2001.

C9. <u>S. Lalis</u> and A. Karipidis, "Leasing in a Market for Computing Capacity", short paper, *IFIP/GI International Conference on Trends towards a Universal Service Market*, September 2000. Lecture Notes in Computer Science, vol. 1890, Springer.

C8. <u>S. Lalis</u>, "A Design Pattern and Programming Framework for Interactive Metacomputing", *Joint Modular Language Conference*, September 2000. Lecture Notes in Computer Science, vol. 1897, Springer.

C7. <u>S. Lalis</u> and A. Karipidis, "An Open Market-based Architecture for Distributed Computing", *International Workshop on Personal Computer-based Networks of Workstations*, *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, May 2000. Lecture Notes in Computer Science, vol. 1800, Springer.

C6. V. Christophides, C. Houstis, <u>S. Lalis</u> and H. Tsalapata, "Ontology-driven Integration of Scientific Repositories", *Workshop on Next Generation Information Technologies and Systems*, July 1999. Lecture Notes in Computer Science, vol. 1649, Springer.

C5. C. Houstis, <u>S. Lalis</u> and H. Tsalapata, "THETIS: An Environmental Information System for the Support of Coastal Zone Management", *Workshop on IT Applied to Natural Resources Management*, May 1999.

C4. <u>S. Lalis</u>, M. Marazakis and D. Papadakis, "Effects of Resource Autonomy on End-to-End Service Provision", short paper, *IEEE International Symposium on Autonomous Decentralized Systems (ISADS)*, March 1999.

C3. <u>S. Lalis</u>, C. Nikolaou, D. Papadakis and M. Marazakis, "Market-driven Service Allocation in a QoS-capable Environment", *International Conference on Information and Computation Economies (ICE)*, October 1998.

C2. <u>S. Lalis</u> and B. Sanders, "Adding Concurrency to the Oberon System", *International Conference on Programming Languages and System Architectures*, March 1994. Lecture Notes in Computer Science, vol. 782, Springer.

C1. <u>S. Lalis</u> and C. Szyperski, "A New Approach to Structuring Distributed Applications using Hierarchical Worlds", short paper, *ACM SIGPOS European Workshop on Fault Tolerance Support in Distributed Systems*, September 1990.

Poster/demo papers in international conferences

P6. M. R. Gkeka, A. Patras, N. Tavoularis, S. Piperakis, E. Hourdakis, P. Trahanias, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, "FPGA Accelerators for Robust Visual SLAM on Humanoid Robots", *International Symposium on Field-Programmable Gate Arrays (FPGA)*, February 2022.

P5. N. Bellas, C. D. Antonopoulos, <u>S. Lalis</u>, M. R. Gkeka, A. Patras, G. Keramidas, I. Stamoulis, N. Tavoularis, S. Piperakis, E. Hourdakis, P. Trahanias, P. Zikas, G. Papagiannakis and I. Kartsonaki, "Architectures for SLAM and Augmented Reality Computing", *International Conference on Field-Programmable Logic and Applications (FPL)*, September 2021.

P4. V. Vassiliadis, K. Parasyris, C. Chalios, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, H. Vandierendonck and D. S. Nikolopoulos, "A Programming Model and Runtime System for Significance-Aware Energy-Efficient Computing", *ACM Symposium on Principles and Practice of Parallel Programming (PPoPP)*, February 2015.

P3. G. Kazdaridis, D. Stavropoulos, S. Ioannidis, T. Korakis, <u>S. Lalis</u> and L. Tassiulas, "A Demonstration of the NITOS BikesNet Framework", *IEEE International Conference on Mobile Data Management (MDM)*, July 2014.

P2. G. Georgakoudis, <u>S. Lalis</u> and D. S. Nikolopoulos, "Dynamic Binary Rewriting and Migration for Shared-ISA Asymmetric, Multicore Processors", *ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC)*, June 2012.

P1. J. Domaszewicz, A. Pruszkowski, P. Cieślak, T. Paczesny, M. Rój, <u>S. Lalis</u>, G. Georgakoudis and M. Koutsoubelias, "POBICOS Development Tools for Opportunistic Pervasive Computing", *IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)*, June 2009.

Other publications

O18. V. Vassiliadis, K. Parasyris, C. D. Antonopoulos, <u>S. Lalis</u> and Nikolaos Bellas, "Using Artificial Neural Networks for Error Detection in Unreliable Computations", *Workshop On Approximate Computing (WAPCO)*, *High Performance and Embedded Architecture and Compilation Conference (HiPEAC)*, January 2017. On the web, no officially published proceedings.

O17. M. Koutsoubelias and <u>S. Lalis</u>, "Coordinated Broadcast-based Request-Reply and Group Management for Tightly-Coupled Wireless Systems", *arXiv repository*, June 2016.

O16. K. Parasyris, V. Vassiliadis, C. D. Antonopoulos, N. Bellas and <u>S. Lalis</u>, "Compiler Techniques for Protection of Critical Instructions on Faulty Architectures", *Workshop On Approximate Computing (WAPCO)*, *High Performance and Embedded Architecture and Compilation Conference (HiPEAC)*, January 2016. On the web, no officially published proceedings.

O15. K. Parasyris, V. Vassiliadis, C.D. Antonopoulos, <u>S. Lalis</u> and N. Bellas, "A Significance-Aware Software Stack for Computing on Unreliable Hardware", *Workshop on Approximate Computing Across the System Stack (WACAS)*, *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, March 2015. On the web, no officially published proceedings.

O14. V. Vassiliadis, K. Parasyris, C. Chalios, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, H. Vandierendonck and D. S. Nikolopoulos, "A Programming Model and Runtime System for Significance-Aware Energy-Efficient Computing, *Workshop On Approximate Computing (WAPCO)*, *High Performance and Embedded Architecture*

and Compilation Conference (HiPEAC), January 2015. On the web, no officially published proceedings.

O13. V. Vassiliadis, K. Parasyris, C. Chalios, C. D. Antonopoulos, <u>S. Lalis</u>, N. Bellas, H. Vandierendonck and D. S. Nikolopoulos, "A Programming Model and Runtime System for Significance-Aware Energy-Efficient Computing", *arXiv repository*, December 2014.

O12. A. Sadogidis and <u>S. Lalis</u>, "Add some Olives to your Coffee: A Java-based GUI for the Octopus System", *International Workshop on Plan9*, November 2012. On the web, no officially published proceedings.

O11. F. J. Ballesteros, E. Soriano, <u>S. Lalis</u> and G. Guardiola, "Improving the performance of Styx Based Services over High Latency Links", Technical Report, RoSAC-2011-2, Rey Juan Carlos University, 2011.

O10. <u>S. Lalis</u>, A. Savidis and C. Stephanides, "Supporting Distributed User Interfaces in Mobile and Wearable Device Ensembles: the 2WEAR Experience", *Workshop on Ensembles of On-Body Devices*, *International Conference on Human-Computer Interaction with Mobile Devices and Services (Mobile-HCI)*, October 2010. On the web, no officially published proceedings.

O9. F. J. Ballesteros, G. Guardiola, E. Soriano and <u>S. Lalis</u>, "OP: Styx Batching for High Latency Links", *2nd International Workshop on Plan9*, December 2007. On the web, no officially published proceedings.

O8. I. Avramopoulos, D. Syrivelis, J. Rexford and <u>S. Lalis</u>, "Secure Availability Monitoring Using Stealth Probes", Technical Report TR-769-06, Princeton University, October 2006.

O7. L. Bannon, G. Boriello, R. Campbell, J. Coutaz, A. Dey, A. Gershman, H. Gellersen, A. Kameas, M. Kyng, <u>S. Lalis</u>, J. Landay, A. McIean, F. Mattern, P. Nixon, J. Paradiso, D. Russell, N. Streitz and T. Winograd, "The Disappearing Computer", *Report of the NSF-EU Invitational Workshop on the Disappearing Computer Initiative*, ERCIM and NSF, April 2004.

O6. <u>S. Lalis</u>, "Supporting Adaptive Operation in a Dynamically Composable Personal System", *Workshop on European Research on Middleware and Architectures for Complex and Embedded Cooperative Systems*, *IEEE International Symposium on Autonomous Decentralised Systems (ISADS)*, April 2003. Invited paper & presentation.

O5. C. Houstis, <u>S. Lalis</u>, N. Patrikalakis and W. Cho, "Federated Scientific Information Systems", *NSF-EU Invitational Workshop on Very Large Data Bases*, September 1999. Invited position paper.

O4. C. Houstis, C. Nikolau, <u>S. Lalis</u>, S. Kapidakis and C. Christophides, "Open Scientific Data Repositories Architecture", *NSF Invitational Workshop on Distributed Information*, Computation, and Process Management for Scientific and Engineering Environments, May 1998. Invited position paper.

O3. <u>S. Lalis</u> and C. Nikolaou, "Federated Digital Libraries in Europe – A Forecast", *Conference on Electronic Communication and Research in Europe*, Academia Europaea, Darmstadt, Germany, April 1998, *Electronic Communication and Research in Europe*, J. Meadows and H-D. Boecker (eds), European Commission. Invited paper.

O2. C. Dallas, P. Hugenholtz, <u>S. Lalis</u>, J. MacKie-Mason, C. Nikolaou, A. Okerson, B. Rous, J. Sairamesh, P. Samuelson, S. Steinmetz, C. Vanoirbeek and M. Wellman, "Intellectual Property Rights and Economic Issues in Digital Libraries", *Report of the Joint NSF-EU Working Groups on Future Developments for Digital Libraries Research*, October 1998.

O1.   S. Lalis, "Supporting Distributed Programming in the Oberon Environment", Technical Report, ETH Zurich, February 1991.

OTHER SCIENTIFIC ACTIVITIES

o   Member of the technical program committee: Conference on Architecture of Computing Systems (ARCS), (2005-2009), Ubiquitous Computing Conference (Ubicomp) (2002-2003), Workshop on Middleware for Ubiquitous Computing, in conjunction with the Middleware Conference (Middleware) (2003-2008), Workshop on Global and Peer-to-Peer Computing, in conjunction with the International Symposium in Cluster, Cloud, and Grid Computing (CCGrid) (2001-2004), International Workshop on Mobile and Pervasive Internet of Things, in conjunction with International Conference on Pervasive Computing and Communications (PerCom) (2018), International Workshop on Pervasive Flow of Things, in conjunction with International Conference on Pervasive Computing and Communications (PerCom) (2019).

o   Reviewer: Ubiquitous Computing Conference (Ubicomp) (2004-2005), International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (Mobiquitous) 2005-2006, Conference on Mobile and Ubiquitous Multimedia (2014), Transactions on Parallel and Distributed Computing (TPDS) (2013-2014), Sensors Applications Symposium (SAS) (2015-2019).

o   Invited participation and presentations to EC/NSF events and workshops: IST Conference 2000, IST Conference 2003, NSF-EU Invitational Workshop on the Disappearing Computer Initiative 2004, EC/HIPEAC Invitational Workshop on Energy-Efficient Computing Systems, Dynamic Adaptation of Quality of Service and Approximate Computing 2014.

o   Organization of the 3rd International Workshop on Plan9, Volos, Greece 2008.

PROJECT-BASED FUNDING

Projects where there is/was a significant personal contribution in the core concept, proposal writing and management of technical work (besides the participation in R&D tasks).

o   *MLSysOps*: Machine Learning for Autonomic System Operation in the Heterogeneous Edge-Cloud Continuum, Horizon Europe Call on Cognitive Cloud: AI-enabled computing continuum from Cloud to Edge, 2023-2025, total budget 5.711.250 €.
Contribution: proposal writing, project coordination - PI, work system architecture and ML-based application and system management mechanisms.

o   *VEPIT*: Vessel Energy Profiling based on IoT, Greek Ministry of Development, General Secretariat for Research and Technology, Call for Collaborative R&D projects, 2022-2024, total budget 905.468 €.
Contribution: proposal writing, work on digital twin functions, work on automated deployment and management of IoT data processing pipeline.

o   *IPLS development grant:* Extend the IPLS (interplanetary learning system) to add support for more efficient interaction and synchronization between the peer devices, computation offloading from peer devices to powerful nodes and enhanced privacy. Protocol Labs (US), open call for research proposals, 2021-2023, total budget: 42.000 €.
Contribution: proposal writing, IPLS architecture and performance evaluation.

o   *PV-Auto-Scout:* Integrated system for the automated inspection of photovoltaic parks using IR-thermography via autonomous aerial vehicles (drones), Greek Ministry of

Development, General Secretariat for Research and Technology, Call for Collaborative R&D projects, 2018–2021, total budget: 999.975 €.

Contribution: proposal writing, scientific PI, work on the overall system architecture and the system software for the automated coordination of the drones.

- o *vipGPU:* Very low power GPUs for mobile robotics and virtual reality applications, Greek Ministry of Development, General Secretariat for Research and Technology, 2018–2021, total budget: 947.899 €.

  Contribution: proposal writing, member of the core research team, work on system software support for the programming of low-power GPUs.

- o *UniServer:* A Universal Micro-Server Ecosystem by Exceeding the Energy and Performance Scaling Boundaries, European Commission, H2020 ICT Call on Next Generation Servers, Micro-Server and Highly Parallel Embedded Computing Systems, 2016–2019, total budget: 4.815.800 €.

  Contribution: proposal writing, member of the core research team, work on the fault-tolerant hypervisor and scheduling policies that exploit undervolting in CPUs.

- o *AeroLoop:* Flexible Experimentation with Virtual UAVs through a Software-in-the-loop and Hardware-in-the-loop Simulation Infrastructure, European Commission, FP7 ICT FIRE / RAWFIE Open Call for third parties, 2016–2018, total budget: 100.000 €.

  Contribution: proposal writing, PI, work on the overall system architecture and the integration with the RAWFIE testbed infrastructure.

- o *SCoRPiO:* Significance-Based Computing for Reliability and Power Optimization, FP7 ICT Future and Emerging Technologies (FET) Open Call, 2013–2016, total budget: 2.480.000 €.

  Contribution: proposal writing, member of the core research team, work on the programming model and runtime support for fault-tolerant and approximate computing.

- o *MariBrain:* Remote Ship Monitoring and Condition-Based Maintenance using Wireless Sensor Network Technology, Greek Ministry of Development, General Secretariat for Research and Technology, Call for Collaborative R&D projects, 2012–2015, total budget: 1.875.000 €.

  Contribution: proposal writing, member of the core research team, work on system-level support for WSN management, reprogramming and virtual sensor subsystem.

- o *SACCOM:* Soft Actuation over Cooperating Objects Middleware, European Commission, FP7 ICT FIRE SmartSantander Open Call for third parties, 2012–2013, total budget: 200.000 €.

  Contribution: proposal writing, co-PI, work on the proxy sensor nodes, the concept of soft actuation concept and the experimental evaluation with real users.

- o *POBICOS:* Platform for Opportunistic Behaviour in Incompletely Specified, Heterogeneous Object Communities, European Commission, FP6 ICT Call on Cooperating Objects, 2008–2011, total budget: 3.200.000 €.

  Contribution: proposal writing, member of the core research team, work on the end-user and application programming model and the corresponding middleware.

- o *2WEAR:* A Runtime for Adaptive and Extensible Wireless Wearables, European Commission, FP5 IST Future and Emerging Technologies (FET) Proactive Call on the Disappearing Computer, 2001–2003, total budget: 3.600.000 €.

  Contribution: proposal writing, PI, work on the overall system architecture, the service discovery and remote invocation subsystem, and the distributed personal area file system.

- o *ARION:* An Advanced Lightweight Architecture for Accessing Scientific Collections, European Commission, FP5 IST Call on Advanced Digital Libraries, 2001–2004, total budget: 2.800.000 €.

Contribution: proposal writing, member of the core research team, work on the federated system architecture, service discovery, matchmaking and composition, and distributed long-running workflows via mobile agents.

o *THETIS:* A Data Management and Data Visualization System for Supporting Coastal Zone Management for the Mediterranean Sea, European Commission, FP4 IST Call on Telematics Applications for Research, 1997–1999.
Contribution: member of the core research team, work on the federated system architecture and transparent remote invocation of simulation models over the Internet.

TEACHING

Electrical and Computer Engineering Department, University of Thessaly:

o *Programming I* (introduction to C/Java), core undergraduate, 2000-2003.

o *Programming II* (POSIX API), core undergraduate, 2013-today.

o *Concurrent Programming*, was core, now elective undergraduate, 2003-today.

o *Distributed Systems*, was core, now elective undergraduate, 2003-today.

o *Wireless Sensor Network Systems*, elective advanced undergraduate/graduate, 2012-today.

All the above courses (including assignments/labs) were developed from scratch.

Computer Science Department, University of Crete:

o *Programming in Assembly, C and C++*, core undergraduate, 1998-1999.

o *Software Engineering Laboratory*, elective undergraduate, 1998-1999.

o *Distributed Systems*, graduate, 1997-1999.

Informatics Engineering Department, ETHZ (teaching assistant):

o *Programming I* (introduction to programming), core undergraduate, 1990-1992.

o *Programming III* (programming in assembly), core undergraduate, 1990-1992.

o *Programming IV* (programming paradigms), core undergraduate, 1990-1993.

o *Distributed Systems*, elective undergraduate, 1993-1994.

o *Formal Methods*, elective undergraduate, 1993-1994.

PHD STUDENT SUPERVISION (COMPLETED)

Main supervisor:

o *Nasos Grigoropoulos* (2022): System-Level Support for the Fault Tolerance, Orchestration and Testing of Distributed Drone Applications.

o *Manos Koutsoubelias* (2018): Programming and testing support for drone-based applications.

o *Giorgis Georgakoudis* (2016): Scheduling and performance characterization on heterogeneous computing systems. Co-supervision with Prof. Dimitris S. Nikolopoulos.

o *Nikos Tziritas* (2011): Algorithms and system-level support for agent placement and migration in wireless sensor networks.

o *Dimitris Syrivelis* (2009): Exploiting reconfigurable heterogeneous parallel architectures in a multitasking context: a systems approach.

o *Alexandros Karypidis* (2006): OmniStore: mechanisms for automating data management in a personal system comprising several portable devices.

Co-supervisor (member of the advisory committee with active involvement in this research):

o *Ntinos Parasyris* (2018): System software techniques to enhance reliability of modern platforms.

o *Vassilis Vassiliadis* (2017): Optimization of program execution using computational significance.

GRADUATE / UNDERGRADUATE STUDENT SUPERVISION (COMPLETED)

Main supervisor in MSc theses:

o 8 MSc theses, Electrical and Computer Engineering Department, University of Thessaly.

o 2 MSc theses, Computer Science Department, University of Crete.

Main supervisor in Engineering Diploma and BSc theses:

o 32 Engineering Diploma theses, Electrical and Computer Engineering Department, University of Thessaly.

o 4 BSc theses, Computer Science Department, University of Crete.

ADMINISTRATIVE EXPERIENCE

o Main person responsible for the organization of the software track, Electrical and Computer Engineering Department, University of Thessaly, 2000–today.