

**1. Personal Info****Name:** Kalogerakis Michael**Date of Birth:** Nov 7, 1959**Place of Birth:** Athens, Greece**2. Position****Main Position:** Associate Professor, Department of Electrical and Computer Engineering, School of Engineering, Hellenic Mediterranean University (H.M.U.)**Other Positions:** Researcher, Laboratory of Artificial Intelligence and Systems Engineering, Department of Electrical and Computer Engineering, School of Engineering, H.M.U.

Researcher, Institute of Energy, Environment and Climate Change, University Research Center, H.M.U.

Collaborating Researcher, Institute of Applied and Computational Mathematics, Foundation for Research and Technology - Hellas (IACM/ FORTH).

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IACM/ FORTH N. Plastira 100, Vassilika Vouton, Heraklion, Crete. Tel. 2811391789 / email: mixalis\_AT\_iacm.forth.gr

**3. Education****Clarkson University, New York, U.S.A.**

1986 Ph.D. : Department of Mathematics and Computer Science (Thesis title: Linear Solvers on Multiprocessor Machines)

*The above Thesis has been included in the database of the U.S. Department of Energy / Scientific and Technical Information Service (www.osti.gov - OSTI ID: 6624863).*

1982 M.Sc. : Department of Mathematics and Computer Science

**University of Crete, Greece.**

1981 B.Sc. in Mathematics, Department of Mathematics in University of Crete

**4. Foreign Languages**

English (fluently), French (average), Greek (native language)

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## **5. Teaching Experience**

### **Hellenic Mediterranean University [www.hmu.gr](http://www.hmu.gr)**

2019 - Associate Professor, Department of Electrical and Computer Engineering, School of Engineering, Hellenic Mediterranean University (H.M.U.)

### **Technological Educational Institute (TEI) of Crete [www.teicrete.gr](http://www.teicrete.gr)**

1993 - 1998 Teaching / Research Fellow, Division of Computer Science, Department of Sciences  
1998 - 2012 Assistant Professor, Division of Computer Science, Department of Sciences  
2012 - 2013 Associate Professor, Division of Computer Science, Department of Sciences  
2013 - 2019 Associate Professor Department of Electrical Engineering, School of Engineering

### **University of Crete**

1991-1993 Visiting Professor, Computer Science Department, School of Sciences & Engineering

### **University of Patras**

1986-1990 Teaching Assistant, Department of Computer Engineering and Informatics, School of Engineering

### **Clarkson University, New York, U.S.A.**

1981-1985 Teaching Assistant, Department of Mathematics and Computer Science

## **6. Research Experience**

### **Institute of Energy, Environment and Climate Change**

University Research Center of H.M.U

2020 - Researcher

### **Artificial Intelligence and Systems Engineering Laboratory**

Department of Electrical and Computer Engineering, School of Engineering, H.M.U  
<https://aise.cs.hmu.gr/>

2014 - Researcher

### **Institute of Applied and Computational Mathematics**

Foundation for Research and Technology - Hellas (IACM/ FORTH).

[www.iacm.forth.gr](http://www.iacm.forth.gr)

1993 - 1996 Research Fellow, Wave Propagation Group

1996 - Collaborating Researcher, Wave Propagation Group

### **Computer Technology Institute, Patras [www.cti.gr](http://www.cti.gr)**

1986 - 1990 Collaborating Researcher, Advanced Software Development Group

## **7. Administrative Experience**

- Chairman and/or member of the Procurement Committee of TEI Crete for several academic years
- Head and/or Deputy Head of the Computer Science Division, Department of General Sciences TEI Crete, for several academic years
- Numerous participations in evaluation, electoral and other committees.

## **8. Research Projects**

- 1987-1990      Research Project **ESPRIT P-1522 (SPAN)** for the construction of a user-friendly expert system for optimal solution of PDEs using new parallel languages developed for this purpose  
Project Coordinator: THORN/EMI London UK
- 1989-1991      Research Project **ESPRIT P-509 (PADMAVATI)** design and construction of a library of parallel algorithms for selected Numerical Analysis problems on a novel parallel architecture based on Transputers  
Project Coordinator: Thomson CSF, France
- 1990-1991      Research Project of the Laboratory of Forensic Sciences of the University of Crete entitled "The needs of the chronic patients in hyperbaric oxygen"  
Project Coordinator: University of Crete
- 1993-1995      Research Project **SMI-133 (DELTA 2002)** for the creation of a pan-European network of computers for flexible distance learning, using multimedia, and network implementation for SMEs training.  
Project Coordinator: IACM/FORTH
- 1995-1997      Research Project **SU-1101 (AGORA)**. Telematics application program. A continuation of SMI-133 / DELTA 2002 (see above)  
Project Coordinator: IACM/FORTH
- 1996-1999      Research Project MAS3-CT97-0147 **OCTOPUS (Ocean Tomography Operational Package and Utilisation Support)** for the development of a user-friendly environment called TOMOLAB for the processing of tomographic data  
Project Coordinator: IfM Kiel Germany

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- 1999-2004 Participation in the design and development of an integrated system for the analysis of underwater acoustic systems of passive and active detection code named Calypso. This system has been installed since 2005 on all warships and submarines of the Greek Navy.  
Project Coordinator: IACM/FORTH
- 2005-2009 Research Project FP6-018509-**DAMOCLES** in the context of FP6 Global Change and Ecosystems: Analysis and near-real-time broadcasting of tomographic data from the Fram Strait area in the Arctic Ocean  
Project Coordinator: University Pierre & Marie Curie France
- 2006-2007 Research Project **Archimedes II** – Artificial Intelligence Applications in Software Technology and Medicine to Develop a Toolkit for Transformation and Verification of Programs  
Project Coordinator: TEI of Crete
- 2010 Research Project **Arctic Ocean ESONET Mission** (EU/FP6) Development of scientific understanding, technological infrastructure and methods for the acquisition and analysis of real-time environmental data in the Fram Strait (Hausgarten), aiming at better monitoring of climate change in the Arctic Ocean.  
Project Coordinator: AWI Bremenhaven
- 2014 Research Project **EDELWEISS** funded by the NGO Ocean Care: Design, conduct and analysis of the results of a controlled experiment for cetacean detection and localization off the southwest coast of Greece in the framework of the study of the sperm whale community in the Mediterranean Sea.  
Project Coordinator: IACM/FORTH
- 2014-2015 Research Project **SEA EARS** (Δράση «Αριστεία II» ΕΚΤ / ΕΣΠΑ) for the three-dimensional passive localization of broadband underwater sound sources in the interior of the sea, taking into account the effects of refraction and utilizing phenomena of multipath acoustic propagation.  
Project Coordinator: IACM/FORTH
- 2018 - 2020 Research Project **PERAN** "Innovative Actions in Environmental Research and Development" OPS code (MIS) 5002358 on, the evolution of the technology developed in the SEA EARS research program for detecting underwater pulsed sound sources.  
Project Coordinator: IACM/FORTH

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2019 - 2022 Research Project **SWAN** funded by the NGO Ocean Care:  
Designing and implementing a real-time detection system for sperm whales and other cetaceans for early warning of adjoining ships to avoid collisions

Project Coordinator: IACM/FORTH

### **9. Other Projects / Activities**

- 1980 - 1981 Operator and Programming consultant at the Computer Center of the University of Crete.
- 1981 Participation in the development team of the simulator of the experimental computer ALFA1S used for the educational purposes University of Crete.
- 1983 Study and implementation of a pilot student database application at the University of Crete.
- 1986 - 1987 Head of the team for the evaluation, supply and installation of mathematical software packages at the computer center of the Polytechnic School of the University of Patras
- 1986 - 1990 Computer support of the AWOC'86, ICS'87, AWOC'88, ICS'89 and SPAA'90 conferences held under the auspices of CTI Patras
- 1987 Study and partial implementation of the computerization of part of the administrative services (payroll protocol, accounting assistance) of the Institute of Computer Technology of Patras.
- 1987-1989 Supervision of diploma - thesis carried out by students of the Department of Computer Engineering Informatics of the Polytechnic School of the University of Patras
- 1989 - 1990 Participation in the evaluation committee, head of installation and co-head of operation of the intel iPSC / 2 multiprocessor system (16 processors in supercube geometry) at the Institute of Computer Technology of Patras
- 1992 Conduct (upon invitation) of a part of the seminar 'Distance education and Informatics' organized IACM/FORTH in the frameworks of the EU program BRITE / EURAM.
- 1993-1995 Creation of a universal model of unification of the specifications of the input parameters and presentation of results of hydroacoustic problems and adaptation of existing hydroacoustic methods at IACM/FORTH
- 1994-1996 Design and development of a pilot Unix environment to for access unification of hydroacoustic methods
- 1995-1996 Participation in the organization and conduct of the 3rd European Conference on Underwater Acoustics held in June 1996 in Heraklion by IACM/FORTH.

- 1995 -1998 Development of a software package for solving hydroacoustic problems in a graphical environment based on a new universal standard for integrating the specifications of input parameters and results presentation.
- 1996 Design, organization and development of the website of the Underwater Acoustics Group of IACM/FORTH
- 1996 -1997 Code optimization for of a number of numerical analysis software packages taking into account the computer architectures they run on.
- 1998-1999 Development of a new model for displaying and manipulating results from three-dimensional methods of solving natural problems and application to results of hydroacoustic problems.
- 2006 Participation in the organization of the 2<sup>nd</sup> round of THALATTA seminars of HEL.IN. A in Heraklion Crete [www.helina.gr](http://www.helina.gr)
- 2008 Participation in the organization of an international summer school of marine acoustics (July 18-27, 2008) in the framework of the DAMOCLES program. [ssua08.iacm.forth.gr](http://ssua08.iacm.forth.gr)
- 2009 Development of an autonomous interactive multimedia presentation about the sounds in the marine environment, installed at Cretaquarium in Crete. [www.cretaquarium.gr](http://www.cretaquarium.gr)
- 2011 Participate in the creation of an interactive educational environment for aquaria and science museums entitled **Ocean Sound Lab**. [osl.iacm.forth.gr](http://osl.iacm.forth.gr)

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## **10. Publications**

### *Articles in Journals and reviewed conference proceedings*

1. M.A. Kalogerakis *A new parallel algorithm for banded linear systems*, Second SIAM Conference on Parallel Processing for Scientific Computing, Norfolk Virginia Nov 18-22, 1985.
2. M.A. Kalogerakis *Visual Acoustics: A User Friendly Virtual Environment for the Solution of Underwater Acoustic Problems*, Ninth Undersea Defence Technology Conference and Exhibition, Hamburg Germany, June 24-26, 1997
3. M.A. Kalogerakis *A new prototype for the dynamic visualization and manipulation of the results produced by three dimensional acoustic numerical solvers*, Ninth Undersea Defence Technology Conference and Exhibition, Hamburg Germany, June 24-26, 1997
4. E.K. Skarsoulis and M.A. Kalogerakis *A Computer System For Underwater Passive Acoustic Detection Analysis* Conference for Acoustic Technology'98 , Piraeus Greece, December 8-10, 1998
5. Uwe Send, Emmanuel Skarsoulis, Michael Kalogerakis, Fabienne Gaillard, Catherine Maillard, Didier Mauary *Operational Tools for Ocean Acoustic Tomography (TOMOLAB)*, International Conference on the Ocean Observing System for Climate Saint Raphael, France December 18-22, 1999
6. M. Kalogerakis, E.. Skarsoulis, , J.. Papadakis, E.Flouri, G. Piperakis R. Fountoulakis, A. Gamaletsos, D. Angelopoulos *An Integrated Computer System For Underwater Acoustic Detection Analysis* 2004 UDT Conference , Nice France June 22-25 2004
7. E.K. Skarsoulis, A. Frantzis, M. Kalogerakis *Passive Localization Of Pulsed Sound Sources with A 2-Hydrophone Array* Seventh European Conference on Underwater Acoustics, ECUA 2004 Delft, The Netherlands , July 5-8, 2004
8. E.K. Skarsoulis, A. Frantzis, M. Kalogerakis *Παθητικός εντοπισμός υποβρύχιων παλμικών πηγών με συστοιχία δύο υδροφώνων* ΑΚΟΥΣΤΙΚΗ 2004, Θεσσαλονίκη Σεπτέμβριος 2004
9. E. Skarsoulis, M. Kalogerakis *Παθητικός εντοπισμός παλμικών ηχητικών πηγών στη θάλασσα με χρήση Θεωρίας Ακτίνων* ΑΚΟΥΣΤΙΚΗ 2006, Ηράκλειο Σεπτέμβριος 2006
10. E.K. Skarsoulis, M.A. Kalogerakis, *Ray-theoretic localization of an impulsive source in a stratified ocean using two hydrophones*, *Journal of the Acoustical Society of America*, Vol. 118, pp. 2934-2943, 2005.  
<http://dx.doi.org/10.1121/1.2041267>
11. E.K. Skarsoulis, M.A. Kalogerakis *Two-hydrophone localization of a click source in the presence of refraction* *Applied Acoustics* Vol. 67, pp. 1202-1212, 2006.
12. H. Sagen, S. Sandven , E. Skarsoulis, M. Kalogerakis, J. Abrahamsen, P. Skagen *The Fram Strait acoustic tomography system* Proceedings of the DAMOCLES workshop "Current problems for operational short range weather, ocean and sea-ice forecasting in the Arctic - a user perspective" Polar Environment Centre Tromso Norway, 6-7 June, 2006
13. E.K. Skarsoulis and M.A. Kalogerakis, *A wave-front method for passive localization of a pulsed source in a stratified ocean using two hydrophones* , *Proc. 8th Eur. Conf. Underwater Acoustics*, S. M. Jesus and O. C. Rodríguez (Ed.), pp. 651-656, 2006

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14. H. Sagen, S. Sandven , E. Skarsoulis, G. Piperakis, M. Kalogerakis, Peter Worcester *DAMOCLES: The Fram Strait acoustic tomography system* 2<sup>nd</sup> International Conference and Exhibition on "Underwater Acoustic Measurements: Technologies & Results" Crete June 25-29 2007
  15. E. Skarsoulis, G. Piperakis, M. Kalogerakis, H. Sagen, Ocean acoustic tomography: Travel-time inversion in the eastern Fram Strait, *Proc. 9<sup>th</sup> Eur. Conf. Underwater Acoustics*, M. Zakharia (Ed.), pp. 19-23, 2008.  
<http://dx.doi.org/10.1121/1.2932532>
  16. E. Skarsoulis, M. Kalogerakis, J. Papadakis, G. Piperakis *TRITON: A Prototype Software Environment for Underwater Bistatic Acoustic Detection Analysis*, (poster presentation), Undersea Defence Technology Conference and Exhibition (UDT 2009), Cannes France, June 9-11, 2009
  17. H. Sagen, S. Sandven, E. Skarsoulis, P.F. Worcester , A. Beszczynska-Moeller, L. Bertino S. A. Haugen, M. Dzieciuch, G. Piperakis, M. Kalogerakis, P. Sakov *The Fram Strait tomography system for ocean model validation, assimilation and inversion*, International Polar Year Oslo Science Conference (IPY 2010) , Oslo Norway, June 8-12, 2010
  18. E. Skarsoulis, M. Kalogerakis, J. Papadakis, G. Piperakis: *A prototype software environment for bistatic acoustic detection analysis* 10<sup>th</sup> European Conference on Underwater Acoustics, Istanbul Turkey, July 5-9, 2010, pp. 366-369
  19. E. Skarsoulis, G. Piperakis, M. Kalogerakis, H. Sagen, S. Haugen, A. Beszczynska-Moller, P. Worcester: *Tomographic inversions from the Fram Strait 2008-09 experiment* 10<sup>th</sup> European Conference on Underwater Acoustics, Istanbul Turkey, July 5-9, 2010, pp. 265-271
  20. M. Kalogerakis, E. Skarsoulis, G. Piperakis, E. Haviaris: *Ocean Sound Lab: A Software Environment For Introduction To Underwater Acoustics* 11<sup>th</sup> European Conference on Underwater Acoustics, Edinburgh Scotland, July 2-6, 2012, pp. 1348-1353 <http://dx.doi.org/10.1121/1.4767957>
  21. M. Kalogerakis, E. Skarsoulis, G. Piperakis: *Evaluating and Understanding the Usability of an Educational Software Environment for Public Aquaria and Museum Exhibitions*, 1<sup>st</sup> International Conference for Advanced Research in Scientific Areas (ARSA 2012), Dec 3-7, 2012, pp. 2038-2041
  22. P. Papadakis, G. Piperakis, M. Kalogerakis: *Reflection of a plane wave from a two-layered seafloor with non-parallel interface between the layers* Journal of the Acoustical Society of America, Vol. 137 1001 (2015);  
<http://dx.doi.org/10.1121/1.4906276>
  23. E. Skarsoulis, P. Papadakis, M. Kalogerakis, G. Piperakis, E. Orfanakis, A *passive acoustic localization system for broadband sources*, Proc. 3<sup>rd</sup> International Conference on Underwater Acoustics, pp. 341-348, Platania, 2015.
  24. M.A. Kalogerakis, E.K. Skarsoulis, *On the Design of Digital Game-Based Learning Environments for Education of the General Public on Focused Scientific Topics with an Application to Underwater Acoustics*, Proc 2<sup>nd</sup> EAI

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International Conference on Design, Learning & Innovation , Heraklion Crete, October 30-31, 2017

25. Afroditi Stathaki, Haridimos Kondylakis, Emmanouil Marakakis, Michael Kalogerakis *i-Prolog: A Web-based Intelligent Tutoring System for Learning Prolog* Proc 2nd EAI International Conference on Design, Learning & Innovation , Heraklion Crete, October 30-31, 2017
26. E. Skarsoulis, G. Piperakis, M. Kalogerakis, E. Orfanakis, P. Papadakis, S. Dosso, A Frantzis: *Underwater acoustic pulsed source localization with a pair of hydrophones*, Remote Sensing 2018, 10(6), 883; (Invited article) doi.org/10.3390/rs10060883
27. E.K. Skarsoulis, G. Piperakis, E. Orfanakis, P. Papadakis, D. Pavlidi, M. Kalogerakis, P. Alexiadou, A. Frantzis, *A real-time acoustic observatory for sperm-whale localization in the Eastern Mediterranean Sea*, Front. Mar. Sci. 9:873888. doi: 10.3389/fmars.2022.873888

## **11. Other Publications / Technical Reports**

1. M.A. Kalogerakis, *Processing Modules and Modular Architectures*, πτυχιακή εργασία M.Sc. Department of Mathematics and Computer Science, Clarkson University, 1982.
2. M.A. Kalogerakis, *Linear Solvers on Multiprocessor Machines*, διδακτορική διατριβή, Department of Mathematics and Computer Science, Clarkson University, 1986  
*Η διατριβή αυτή έχει συμπεριληφθεί στην Energy Citations Database - Office of Scientific & Technical Information ([www.osti.gov](http://www.osti.gov)) του Υπουργείου Ενέργειας των ΗΠΑ (OSTI ID: 6624863)*
3. M.A. Kalogerakis, *Decreasing the Communication Complexity of Parallel Prefix. A Proposed new algorithm and VLSI Architecture*, TR.87.10.32 Computer Technology Institute, 1987.
4. M.A. Kalogerakis, *Multiprocessor Solution for Systems in Block Tridiagonal Form*, TR.87.10.33, Computer Technology Institute, 1987.
5. M.A. Kalogerakis, *An Optimal Parallel Banded System Solver*, TR.87.12.37, Computer Technology Institute, 1987.
6. M.A. Tsoukarellas, M.A. Kalogerakis, *Developing and Coding Numerical applications in Parle* ,TR.88.01.40, Computer Technology Institute, 1988
7. T.S. Papatheodorou, E.N. Houstis, C.E. Houstis, M.A. Kalogerakis, M.A. Katzouraki.. *On the Modelling and the Solution of PDE's in a Spinlog/Parle based Environment*, TR.88.09.58, Computer Technology Institute, 1988.
8. M.A. Kalogerakis, *A General model for the Analysis and the Automatic Generation of Interprocessor Communication requirements for Matrix Oriented Problems*,TR.88.11.66, Computer Technology Institute, 1988
9. T.S. Papatheodorou, E.N. Houstis, C.E.Houstis, M.A. Kalogerakis, M.A. Katzouraki.. *The Design and Implementation of a Parallel PDE Expert*

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- Solving System in Spinlog - Parle*, ESPRIT 1588 (SPAN) Doc. No. SPAN-WP13-D2, Computer Technology Institute, 1989.
10. M.A. Kalogerakis, T.S. Papatheodorou, E.N. Houstis, *On the Design and implementation of a Parallel Expert Environment for the Solution of Partial Differential Equations*, TR.90.03.04, Computer Technology Institute, 1990.
  11. T.S. Papatheodorou, E.N. Houstis, C.E. Houstis, M.A. Kalogerakis, M.A.Katzouraki.. *The Design and Implementation of a Parallel PDE Expert Solving System Using Languages that Support Numeric and Symbolic Processing*, ESPRIT 1588 (SPAN) Doc. No. SPAN-WP13-F90, Computer Technology Institute, 1990.
  12. M.A. Kalogerakis, *A set of universal I/O specifications for the formal description of straight underwater acoustic problems*, Technical Report # 95.14, Institute of Applied and Computational Mathematics, 1995
  13. M.A. Kalogerakis, *WAVE: A multi-platform virtual acoustic toolbox* Technical Report # 96.17, Institute of Applied and Computational Mathematics, 1996
  14. M.A. Kalogerakis, *An Integrated software approach to the calculation of the sound propagation loss using different computational models*. Technical Report # 96.18, Institute of Applied and Computational Mathematics, 1996