Curriculum Vitae

Konstantinos M. Giannoutakis

October 7, 2022

Contents

1 Personal Information **2**

2 Education **2**

3 Fellowships-Awards **2**

4 Theses **2**

5 Scientific Publications **3**
5.1 International Journals 3
5.2 Book Chapters 6
5.3 Book Contributions 6
5.4 International Conferences 8

6 Books **12**

7 Invited Lectures **12**

8 Research Programs **12**
8.1 European Research Programs 12
8.2 National Research Programs 13

9 Reviewer in International Journals **13**

10 Committees in International Conferences **14**

11 Evaluator in International and National Bodies **15**

12 Professional Experience **15**

13 Teaching Experience **16**

14 Online courses **16**

15 Languages **17**

16 Scientific Interests **17**

1 Personal Information

Surname: Giannoutakis
Name: Konstantinos
Father's Name: Michail
Telephone: +30 2310891810
Email: kgiannou@uom.edu.gr

2 Education

2004-2008: Ph.D. entitled "A study of Advanced High Performance Computational Methods: Preconditioned methods and Inverse Matrix techniques", Department of Electrical and Computer Engineering, Democritus University of Thrace, Grade Excellent (10 out of 10).
2002-2004: M.Sc. in Computational Science, Department of Informatics and Telecommunications, University of Athens, Grade Very Good (7.75 out of 10).
1998-2002: B.Sc. in Mathematics, Department of Mathematics, University of the Aegean, Grade Excellent (8.52 out of 10).

3 Fellowships-Awards

2019: Highly Commented Award for the paper "Automatic categorization of Web Service elements" by emerald publishing (`https://www.emeraldgrouppublishing.com/authors/literati/awards.htm?year=2019`)
2006-2008: Fellowship awarded by Research Committee of Democritus University of Thrace for the project "Management and operation of rooms: a) Informatics - Teleconference and b) Teleeducation - Teleconference", for the Department of Electrical and Computer Engineering.
2005: The Young Researcher Fellowship Award for exemplary research in computational mechanics, Third MIT Conference on Computational Fluid and Solid Mechanics, 14-17 June 2005, Massachusetts Institute of Technology (**M.I.T.**), Boston, U.S.A.
(`http://web.mit.edu/fergroup/www/3AwardeesMain.html`).
2002: Fellowship awarded by IKY (State Scholarship's Foundation) for the performance in the fourth academic year at the department of Mathematics of University of the Aegean.
2001: Fellowship awarded by Municipality of Vathi (capital of Samos), for the performance in the third academic year at the department of Mathematics of University of the Aegean.
2001: Fellowship awarded by IKY (State Scholarship's Foundation) for the performance in the third academic year at the department of Mathematics of University of the Aegean.

4 Theses

[T1] **Konstantinos M. Giannoutakis**. A study of advanced high performance computational methods: Preconditioned methods and inverse matrix techniques. *PhD, Department of Electrical and Computer Engineering, Democritus University of Thrace*, 2008

[T2] **Konstantinos M. Giannoutakis**. Distributed normalized conjugate gradient methods using approximate inverses. *MSc thesis, Department of Informatics and Telecommunications, National and Kapodistrian University of Athens*, 2004

[T3] **Konstantinos M. Giannoutakis**. A study of computational methods for the numerical solution of partial differential equations. *BSc thesis, Department of Mathematics, University of the Aegean*, 2002

5 Scientific Publications

5.1 International Journals

[J35] **Konstantinos M. Giannoutakis**, Christos K. Filelis-Papadopoulos, George A. Gravvanis, and Dimitrios Tzovaras. On the optimization of self-organization and self-management hardware resource allocation for heterogeneous clouds. *Computers*, 10(11), 2021

[J34] **Konstantinos M. Giannoutakis**, Christos K. Filelis-Papadopoulos, George A. Gravvanis, and Dimitrios Tzovaras. Evaluation of self-organizing and self-managing heterogeneous high performance computing clouds through discrete-time simulation. *Concurrency and Computation: Practice and Experience*, 33(17):e6326, 2021

[J33] Christos K. Filelis-Papadopoulos, Patricia Takako Endo, Malika Bendechache, Sergej Svorobej, **Konstantinos M. Giannoutakis**, George A. Gravvanis, Dimitrios Tzovaras, James Byrne, and Theo Lynn. Towards simulation and optimization of cache placement on large virtual content distribution networks. *Journal of Computational Science*, 39:101052, 2020

[J32] Christos K. Filelis-Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, Patricia Takako Endo, Dimitrios Tzovaras, Sergej Svorobej, and Theo Lynn. Simulating large vcdn networks: A parallel approach. *Simulation Modelling Practice and Theory*, 92:100–114, 2019

[J31] Sergej Svorobej, Patricia Takako Endo, Malika Bendechache, Christos Filelis-Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, Dimitrios Tzovaras, James Byrne, and Theo Lynn. Simulating fog and edge computing scenarios: An overview and research challenges. *Future Internet*, 11(3), 2019

[J30] E. Markakis, Y. Nikoloudakis, G. Mastorakis, C. X. Mavromoustakis, E. Pallis, A. Sideris, N. Zotos, J. Antic, A. Cernivec, D. Fejzic, J. Kulovic, A. Jara, A. Drosou, **K. Giannoutakis**, and D. Tzovaras. Acceleration at the edge for supporting smes security: The fortika paradigm. *IEEE Communications Magazine*, 57(2):41–47, February 2019

[J29] Antonios T. Makaratzis, **Konstantinos M. Giannoutakis**, and Dimitrios Tzovaras. Energy modeling in cloud simulation frameworks. *Future Generation Computer Systems*, 79:715 – 725, 2018

[J28] Christos K. Filelis-Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, and Dimitrios Tzovaras. Large-scale simulation of a self-organizing self-management cloud computing framework. *The Journal of Supercomputing*, 74(2):530–550, Feb 2018

[J27] Efthimia Mavridou, **Konstantinos M. Giannoutakis**, Dionysios Kehagias, Dimitrios Tzovaras, and George Hassapis. Automatic categorization of web service elements. *International Journal of Web Information Systems*, 14(2):233–258, 2018

[J26] Erina Ferro, Michele Girolami, Dario Salvi, Christopher Mayer, Joe Gorman, Andrej Grguric, Roni Ram, Rubaiyat Sadat, **Konstantinos M Giannoutakis**, and Carsten Stocklöw. The universaal platform for aal (ambient assisted living). *Journal of Intelligent Systems*, 24(3):301–319, 2015

[J25] Dimitris Giakoumis, Efthimia Mavridou, Konstantinos Votis, **Konstantinos Giannoutakis**, Dimitrios Tzovaras, and George Hassapis. A semantic framework to support the management of cloud-based service provision within a global public inclusive infrastructure. *International Journal of Electronic Commerce*, 20(1):142–173, 2015

[J24] George A Gravvanis, Christos K Filelis-Papadopoulos, **Konstantinos M Giannoutakis**, and Elias A Lipitakis. A note on parallel finite difference approximate inverse preconditioning on multicore systems using posix threads. *International Journal of Computational Methods*, 10(05):1350032, 2013

[J23] George A Gravvanis, PI Matskanidis, **Konstantinos M Giannoutakis**, and Elias A Lipitakis. On the design and implementation of parallel finite element approximate inverses using posix threads on multicore systems. *Engineering Computations*, 29(3):338–354, 2012

[J22] George A Gravvanis, Christos K Filelis-Papadopoulos, and **Konstantinos M Giannoutakis**. Solving finite difference linear systems on gpus: Cuda based parallel explicit preconditioned biconjugate conjugate gradient type methods. *The Journal of Supercomputing*, pages 1–15, 2012

[J21] Dionysios D Kehagias, **Konstantinos M Giannoutakis**, George A Gravvanis, and Dimitrios Tzovaras. An ontology-based mechanism for automatic categorization of web services. *Concurrency and Computation: Practice and Experience*, 24(3):214–236, 2012

[J20] Christos K Filelis-Papadopoulos, George A Gravvanis, PI Matskanidis, and **Konstantinos M Giannoutakis**. On the gpgpu parallelization issues of finite element approximate inverse preconditioning. *Journal of computational and applied mathematics*, 236(3):294–307, 2011

[J19] George A Gravvanis and **Konstantinos M Giannoutakis**. Finite element approximate inverse preconditioning for solving 3 d biharmonic problems on shared memory systems. *Computer Modeling in Engineering & Sciences(CMES)*, 71(4):305–330, 2011

[J18] **Konstantinos M Giannoutakis** and George A Gravvanis. Design and implementation of parallel approximate inverse classes using openmp. *Concurrency and Computation: Practice and Experience*, 21(2):115–131, 2009

[J17] George A Gravvanis and **Konstantinos M Giannoutakis**. Fast parallel finite element approximate inverses. *Computer Modeling in Engineering and Sciences*, 32(1):35–44, 2008

[J16] **Konstantinos M Giannoutakis** and George A Gravvanis. High performance finite element approximate inverse preconditioning. *Applied Mathematics and Computation*, 201(1):293–304, 2008

[J15] George A Gravvanis, **Konstantinos M Giannoutakis**, and Elias A Lipitakis. On the numerical solution of singularly perturbed non-linear parabolic and elliptic partial differential equations. *HERMIS: An International Journal of Computer Mathematics and its Applications*, 8:41–60, 2007

[J14] George A Gravvanis, Victor N Epitropou, and **Konstantinos M Giannoutakis**. On the performance of parallel approximate inverse preconditioning using java multithreading techniques. *Applied Mathematics and Computation*, 190(1):255–270, 2007

[J13] **Konstantinos M Giannoutakis**, George A Gravvanis, B Clayton, Adarsh Patil, Therese Enright, and John P Morrison. Matching high performance approximate inverse preconditioning to architectural platforms. *The Journal of Supercomputing*, 42(2):145–163, 2007

[J12] George A Gravvanis and **Konstantinos M Giannoutakis**. Distributed finite element normalized approximate inverse preconditioning. *Computer Modeling in Engineering and Sciences*, 16(2):69, 2006

[J11] **Konstantinos M Giannoutakis** and George A Gravvanis. Fast normalized approximate inverse preconditioning for solving non-linear finite element systems. *Neural, Parallel and Scientific Computations*, 14(2):205, 2006

[J10] **Konstantinos M Giannoutakis** and George A Gravvanis. A performance study of normalized explicit finite element approximate inverse preconditioning on uniprocessor and multicomputer systems. *Engineering computations*, 23(3):192–217, 2006

[J9] George A Gravvanis and **Konstantinos M Giannoutakis**. Normalized explicit preconditioned methods for solving 3d boundary value problems on uniprocessor and distributed systems. *Inter. J. Numer. Meth. Eng*, 65(1):84–110, 2006

[J8] **Konstantinos M Giannoutakis**, George Gravvanis, and Michael Bekakos. High performance computations using internet and grid technology. *Neural, Parallel & Scientific Computations*, 13(3):469–488, 2005

[J7] George A Gravvanis and **Konstantinos M Giannoutakis**. Parallel preconditioned conjugate gradient square method based on normalized approximate inverses. *Scientific Programming*, 13(2):79–91, 2005

[J6] George A Gravvanis, **Konstantinos M Giannoutakis**, and Nikolaos Missirlis. A distributed preconditioned conjugate gradient method. *Parallel Algorithms and Applications*, 19(2-3):163–174, 2004

[J5] George A Gravvanis and **Konstantinos M Giannoutakis**. Normalized explicit finite element approximate inverse preconditioning. *Computers & structures*, 82(28):2377–2388, 2004

[J4] George A Gravvanis and **Konstantinos M Giannoutakis**. On the rate of convergence and complexity of normalized implicit preconditioning for solving finite difference equations in three space variables. *International Journal of Computational Methods*, 1(02):367–386, 2004

[J3] George A Gravvanis, **Konstantinos M Giannoutakis**, MP Bekakos, and OB Efremides. Parallel and systolic solution of normalized explicit approximate inverse preconditioning. *The Journal of Supercomputing*, 30(2):77–96, 2004

[J2] Agapios N Platis, George A. Gravvanis, **Konstantinos M. Giannoutakis**, and Elias A. Lipitakis. A two-phase cyclic nonhomogeneous markov chain performability evaluation by explicit approximate inverses applied to a replicated database system. *Journal of Mathematical Modelling and Algorithms*, 2(3):235–249, 2003

[J1] George A Gravvanis and **Konstantinos M Giannoutakis**. Normalized explicit finite element approximate inverses. *International Journal of Differential Equations and Applications*, 6(3):253–267, 2003

5.2 Book Chapters

[Ch8] Minas Spanopoulos-Karalexidis, Christos K. Filelis Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, Dimitrios Tzovaras, Malika Bendechache, Sergej Svorobej, Patricia Takako Endo, and Theo Lynn. Simulating across the cloud-to-edge continuum. *Managing Distributed Cloud Applications and Infrastructure: A Self-Optimising Approach*, pages 93–115, 2020

[Ch7] **Konstantinos M. Giannoutakis**, Minas Spanopoulos-Karalexidis, Christos K. Filelis Papadopoulos, and Dimitrios Tzovaras. Next generation cloud architectures. *The Cloud-to-Thing Continuum: Opportunities and Challenges in Cloud, Fog and Edge Computing*, pages 23–39, 2020

[Ch6] Evangelos K. Markakis, Yannis Nikoloudakis, Evangelos Pallis, Georgios Sakellariou, Stavros Salonikias, Nikolaos Tsinganos, Anargyros Sideris, Nikolaos Zotos, Anastasios Drosou, **Konstantinos. M Giannoutakis**, and Dimitrios Tzovaras. The fortika accelerated edge solution for automating smes security. *European Landscape on Cybersecurity and Privacy Research Challenges*, 2019

[Ch5] Christos K. Filelis-Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, Charalampos S. Kouzinopoulos, Antonios T. Makaratzis, and Dimitrios Tzovaras. Simulating heterogeneous clouds at scale. *Heterogeneity, High Performance Computing, Self-Organization and the Cloud, Springer International Publishing*, pages 119–150, 2018

[Ch4] George A. Gravvanis, Christos K. Filelis-Papadopoulos, and **Konstantinos M. Giannoutakis**. Parallel approximate inverse preconditioning using the finite difference method: The general purpose graphics processing units approach. *Trends in Parallel, Distributed, Grid and Cloud Computing for Engineering, Saxe-Coburg Publications*, pages 291–319, 2011

[Ch3] George A. Gravvanis, **Konstantinos M. Giannoutakis**, and Nikolaos D. Iatridis. Fast pagerank computation for web information retrieval by parallel generalized approximate inverse preconditioning. In B.H.V. Topping, J.M. Adam, F.J. Pallares, R. Bru, and M.L. Romero, editors, *Developments and Applications in Engineering Computational Technology*, pages 307–335. Saxe-Coburg Publications, 2010

[Ch2] George A. Gravvanis and **Konstantinos M. Giannoutakis**. High performance preconditioned iterative methods. *Parallel, Distributed and Grid Computing for Engineering, Saxe-Coburg Publications.*, pages 275–308, 2009

[Ch1] Michail P. Bekakos, George A. Gravvanis, Evangelos S. Bazoukis, and **Konstantinos M. Giannoutakis**. Towards a pilot grid platform for internet high performance computations. *Grid Technologies: Emerging from Distributed Architectures to Virtual Organizations, WIT Press.*, pages 363–389, 2006

5.3 Book Contributions

[Bc15] Patricia Takako Endo, Christos Filelis-Papadopoulos, Sergej Svorobej, Anna Gourinovitch, **Konstantinos Giannoutakis**, George Gravvanis, Dimitrios Tzovaras, Divyaa Manimaran Elango,

James Byrne, and Theo Lynn. Recap (reliable capacity provisioning and enhanced remediation for distributed cloud applications): The simulation approach. In Maria Fazio and Wolf Zimmermann, editors, *Advances in Service-Oriented and Cloud Computing*, pages 219–225, Cham, 2020. Springer International Publishing

[Bc14] Charalampos S. Kouzinopoulos, Georgios Spathoulas, **Konstantinos M. Giannoutakis**, Konstantinos Votis, Pankaj Pandey, Dimitrios Tzovaras, Sokratis K. Katsikas, Anastasija Collen, and Niels A. Nijdam. Using blockchains to strengthen thesecurity of internet of things. In Erol Gelenbe, Paolo Campegiani, Tadeusz Czachórski, Sokratis K. Katsikas, Ioannis Komnios, Luigi Romano, and Dimitrios Tzovaras, editors, *Security in Computer and Information Sciences*, pages 90–100. Springer International Publishing, Cham, 2018

[Bc13] A. Collen, N. A. Nijdam, J. Augusto-Gonzalez, S. K. Katsikas, **K. M. Giannoutakis**, G. Spathoulas, E. Gelenbe, K. Votis, D. Tzovaras, N. Ghavami, M. Volkamer, P. Haller, A. Sánchez, and M. Dimas. Ghost - safe-guarding home iot environments with personalised real-time risk control. In Erol Gelenbe, Paolo Campegiani, Tadeusz Czachórski, Sokratis K. Katsikas, Ioannis Komnios, Luigi Romano, and Dimitrios Tzovaras, editors, *Security in Computer and Information Sciences*, pages 68–78, Cham, 2018. Springer International Publishing

[Bc12] Antonios T. Makaratzis, Malik M. Khan, **Konstantinos M. Giannoutakis**, Anne C. Elster, and Dimitrios Tzovaras. Gpu power modeling of hpc applications for the simulation of heterogeneous clouds. In Roman Wyrzykowski, Jack Dongarra, Ewa Deelman, and Konrad Karczewski, editors, *Parallel Processing and Applied Mathematics*, pages 91–101, Cham, 2018. Springer International Publishing

[Bc11] **Konstantinos M. Giannoutakis** and Dimitrios Tzovaras. The european strategy in research infrastructures and open science cloud. In Leonid Kalinichenko, Sergei O. Kuznetsov, and Yannis Manolopoulos, editors, *Data Analytics and Management in Data Intensive Domains: XVIII International Conference, DAMDID/RCDL 2016, Ershovo, Moscow, Russia, October 11 -14, 2016, Revised Selected Papers*, pages 207–221. Springer International Publishing, Cham, 2017

[Bc10] Nikolaos Kaklanis, Konstantinos Votis, **Konstantinos Giannoutakis**, Dimitrios Tzovaras, Valerio Gower, and Renzo Andrich. A unified semantic framework for detailed description of assistive technologies based on the eastin taxonomy. In Klaus Miesenberger, Deborah Fels, Dominique Archambault, Petr Peňáz, and Wolfgang Zagler, editors, *Computers Helping People with Special Needs: 14th International Conference, ICCHP 2014, Paris, France, July 9-11, 2014, Proceedings, Part II*, pages 275–282. Springer International Publishing, Cham, 2014

[Bc9] Nikolaos Kaklanis, Konstantinos Votis, **Konstantinos Giannoutakis**, and Dimitrios Tzovaras. A semantic framework for assistive technologies description to strengthen ui adaptation. In Constantine Stephanidis and Margherita Antona, editors, *Universal Access in Human-Computer Interaction. Design and Development Methods for Universal Access: 8th International Conference, UAHCI 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, June 22-27, 2014, Proceedings, Part I*, pages 236–245. Springer International Publishing, Cham, 2014

[Bc8] Dionisis D. Kehagias, Efthimia Mavridou, **Konstantinos M. Giannoutakis**, and Dimitrios Tzovaras. A wsdl structure based approach for semantic categorization of web service elements. In Stasinos Konstantopoulos, Stavros Perantonis, Vangelis Karkaletsis, Constantine D. Spyropoulos, and George Vouros, editors, *Artificial Intelligence: Theories, Models and Applications: 6th Hellenic Conference on AI, SETN 2010, Athens, Greece, May 4-7, 2010. Proceedings*, pages 333–338. Springer Berlin Heidelberg, Berlin, Heidelberg, 2010

[Bc7] **Konstantinos M. Giannoutakis** and George A. Gravvanis. Parallel approximate finite element inverses on symmetric multiprocessor systems. In Marian Bubak, Geert Dick van Albada, Jack Dongarra, and Peter M. A. Sloot, editors, *Computational Science – ICCS 2008: 8th International Conference, Kraków, Poland, June 23-25, 2008, Proceedings, Part I*, pages 925–934. Springer Berlin Heidelberg, Berlin, Heidelberg, 2008

[Bc6] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Parallel exact and approximate arrow-type inverses on symmetric multiprocessor systems. In Vassil N. Alexandrov, Geert Dick van Albada, Peter M. A. Sloot, and Jack Dongarra, editors, *Computational Science – ICCS 2006: 6th International Conference, Reading, UK, May 28-31, 2006, Proceedings, Part I*, pages 506–513. Springer Berlin Heidelberg, Berlin, Heidelberg, 2006

[Bc5] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Solving non-linear finite difference systems by normalized approximate inverses. In Jun Zhang, Ji-Huan He, and Yuxi Fu, editors, *Computational and Information Science: First International Symposium, CIS 2004, Shanghai, China, December 16-18, 2004. Proceedings*, pages 111–117. Springer Berlin Heidelberg, Berlin, Heidelberg, 2005

[Bc4] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Normalized implicit preconditioned methods based on normalized finite element approximate factorization procedures. In K.J. Bathe, editor, *Third MIT Conference on Computational Fluid and Solid Mechanics*, pages 1115–1119. Elsevier, 2005

[Bc3] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Parallel normalized implicit preconditioned conjugate gradient methods for solving biharmonic equations. In K.J. Bathe, editor, *Third MIT Conference on Computational Fluid and Solid Mechanics*, pages 1120–1125. Elsevier, 2005

[Bc2] George A. Gravvanis and **Konstantinos M. Giannoutakis**. On the rate of convergence and complexity of finite element normalized explicit approximate inverse preconditioning. In K.J. Bathe, editor, *Second MIT Conference on Computational Fluid and Solid Mechanics*, pages 1963–1967. Elsevier, 2003

[Bc1] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Normalized finite element approximate inverse preconditioning for solving non-linear boundary value problems. In K.J. Bathe, editor, *Second MIT Conference on Computational Fluid and Solid Mechanics*, pages 1958–1962. Elsevier, 2003

5.4 International Conferences

[C34] Argyrios P. Ketsetsis, **Giannoutakis, Konstantinos M.**, Georgios Spanos, Nikolaos Samaras, Dimitrios Hristu-Varsakelis, Dimitrios Thomas, and Dimitrios Tzovaras. A comparative study of deep learning techniques for financial indices prediction. In Ilias Maglogiannis, John Macintyre, and Lazaros Iliadis, editors, *Artificial Intelligence Applications and Innovations*, pages 297–308, Cham, 2021. Springer International Publishing

[C33] Argyrios P. Ketsetsis, Christos Kourounis, Georgios Spanos, **Giannoutakis, Konstantinos M.**, Pavlos Pavlidis, Dimitris Vazakidis, Theofanis Champeris, Dimitris Thomas, and Dimitrios Tzovaras. Deep learning techniques for stock market prediction in the european union: A systematic review. In *2020 International Conference on Computational Science and Computational Intelligence (CSCI)*, pages 605–610, 2020

[C32] **K. M. Giannoutakis**, G. Spathoulas, C. K. Filelis-Papadopoulos, A. Collen, M. Anagnostopoulos, K. Votis, and N. A. Nijdam. A blockchain solution for enhancing cybersecurity defence of iot. In *2020 IEEE International Conference on Blockchain (Blockchain)*, pages 490–495, 2020

[C31] G. Spanos, **K. M. Giannoutakis**, K. Votis, B. Viano, J. Augusto-Gonzalez, G. Aivatoglou, and D. Tzovaras. A lightweight cyber-security defense framework for smart homes. In *2020 International Conference on INnovations in Intelligent SysTems and Applications (INISTA)*, pages 1–7, 2020

[C30] Eleni Ketzaki, Petros Toupas, **Giannoutakis, Konstantinos M.**, Anastasios Drosou, and Dimitrios Tzovaras. A behaviour based ransomware detection using neural network models. In *2020 10th International Conference on Advanced Computer Information Technologies (ACIT)*, pages 747–750, 2020

[C29] P. Toupas, D. Chamou, **K. M. Giannoutakis**, A. Drosou, and D. Tzovaras. An intrusion detection system for multi-class classification based on deep neural networks. In *2019 18th IEEE International Conference On Machine Learning And Applications (ICMLA)*, pages 1253–1258, Dec 2019

[C28] P. T. Endo, R. Loomba, R. Quinn, C. K. Filelis-Papadopoulos, **K. M. Giannoutakis**, G. A. Gravvanis, D. Tzovaras, P. Willis, S. Svorobej, J. Byrne, and T. Lynn. Analyzing resource distribution over a real-world large-scale virtual content infrastructure. In *2019 IEEE Symposium on Computers and Communications (ISCC)*, pages 1–7, June 2019

[C27] J. Augusto-Gonzalez, A. Collen, S. Evangelatos, M. Anagnostopoulos, G. Spathoulas, **K. M. Giannoutakis**, K. Votis, D. Tzovaras, B. Genge, E. Gelenbe, and N. A. Nijdam. From internet of threats to internet of things: A cyber security architecture for smart homes. In *2019 IEEE 24th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, pages 1–6, Sep. 2019

[C26] D. Chamou, P. Toupas, E. Ketzaki, S. Papadopoulos, **K. M. Giannoutakis**, A. Drosou, and D. Tzovaras. Intrusion detection system based on network traffic using deep neural networks. In *2019 IEEE 24th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, pages 1–6, Sep. 2019

[C25] G. Spanos, **K. M. Giannoutakis**, K. Votis, and D. Tzovaras. Combining statistical and machine learning techniques in iot anomaly detection for smart homes. In *2019 IEEE 24th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, pages 1–6, Sep. 2019

[C24] C. S. Kouzinopoulos, **K. M. Giannoutakis**, K. Votis, D. Tzovaras, A. Collen, N. A. Nijdam, D. Konstantas, G. Spathoulas, P. Pandey, and S. Katsikas. Implementing a forms of consent smart contract on an iot-based blockchain to promote user trust. In *2018 Innovations in Intelligent Systems and Applications (INISTA)*, pages 1–6, July 2018

[C23] G. Spathoulas, A. Collen, P. Pandey, N. A. Nijdam, S. Katsikas, C. S. Kouzinopoulos, M. Ben Moussa, **K. M. Giannoutakis**, K. Votis, and D. Tzovaras. Towards reliable integrity in blacklisting: Facing malicious ips in ghost smart contracts. In *2018 Innovations in Intelligent Systems and Applications (INISTA)*, pages 1–8, July 2018

[C22] Antonios T. Makaratzis, Christos K. Filelis-Papadopoulos, **Konstantinos M. Giannoutakis**, George A. Gravvanis, and Dimitrios Tzovaras. A comparative study of cpu power consumption models for cloud simulation frameworks. In *Proceedings of the 21st Pan-Hellenic Conference on Informatics*, PCI 2017, pages 10:1–10:6, New York, NY, USA, 2017. ACM

[C21] Theo Lynn, Anna Gourinovitch, James Byrne, PJ Byrne, Sergej Svorobej, **Konstantinos M. Giannoutakis**, David Kenny, and John Morrison. A preliminary systematic review of computer science literature on cloud computing research using open source simulation platforms. *The 7th International Conference on Cloud Computing and Services Science*, pages 537–545, 2017

[C20] **Konstantinos M. Giannoutakis**, Antonios T. Makaratzis, Dimitrios Tzovaras, Christos K. Filelis-Papadopoulos, and George A. Gravvanis. On the power consumption modeling for the simulation of heterogeneous hpc clouds. In *Proceedings of the 1st International Workshop on Next Generation of Cloud Architectures*, CloudNG:17, pages 1:1–1:6, New York, NY, USA, 2017. ACM

[C19] James Byrne, Sergej Svorobej, **Konstantinos M. Giannoutakis**, Dimitrios Tzovaras, PJ Byrne, Per Olov Ostberg, Theo Lynn, and Anna Gourinovitch. A review of cloud computing simulation platforms and related environments. *The 7th International Conference on Cloud Computing and Services Science*, pages 651–663, 2017

[C18] Theo Lynn, Huanhuan Xiong, Dapeng Dong, Bilal Momani, George Gravvanis, CF Papadopoulos, AC Elster, MM Zaki Murtaza Khan, Dimitrios Tzovaras, **Konstantinos Giannoutakis**, Dana Petcu, Marian Neagul, Ioan Dragan, Perumal Kuppudayar, Suryanarayanan Natarajan, Michael McGrath, Georgi Gaydadjiev, Tobias Becker, Anna Gourinovitch, David Kenny, and John Morrison. Cloudlightning: A framework for a self-organising and self-managing heterogeneous cloud. In *6th International Conference on Cloud Computing and Services Science, CLOSER*, volume 2016, 2016

[C17] **Konstantinos M. Giannoutakis**, Dionysios D. Kehagias, and Dimitrios Tzovaras. A three-level semantic categorization scheme of web services. In *2015 IEEE 8th International Conference on Service-Oriented Computing and Applications (SOCA)*, pages 73–77, Oct 2015

[C16] P. I. Matskanidis, G. A. Gravvanis, and **K. M. Giannoutakis**. A note on parallel finite element approximate inverses using openmp on multicore systems. In *2011 15th Panhellenic Conference on Informatics*, pages 259–264, Sep. 2011

[C15] George A. Gravvanis, P.I. Matskanidis, **Konstantinos M. Giannoutakis**, and Elias A. Lipitakis. Finite element approximate inverse preconditioning using posix threads on multicore systems. In *Proceedings of the International Multiconference on Computer Science and Information Technology*, pages 297–302, Oct 2010

[C14] George Gravvanis, Christos Filelis-Papadopoulos, **Konstantinos Giannoutakis**, and E.A. Lipitakis. Approximate inverse preconditioning using posix threads on multicore systems. In *Conference Proceedings NumAn 2010 - Recent Approaches to Numerical Analysis: Theory, Methods and Applications*, 09 2010

[C13] **Konstantinos M. Giannoutakis** and George A. Gravvanis. Parallel iterative methods based on finite element approximate inverses on uniprocessor and multicomputer systems. In *CD-ROM Proceedings of the Sixth International Conference on Engineering Computational Technology 2008*, 2008

[C12] George A. Gravvanis and **Konstantinos M. Giannoutakis**. An improved parallel algorithm for computing approximate inverses by reducing synchronizations. In *2008 International Symposium on Parallel and Distributed Computing*, pages 237–243, July 2008

[C11] **Konstantinos M. Giannoutakis** and George A. Gravvanis. On the design of parallel finite element approximate inverses. In *International Conference on Parallel and Distributed Processing Techniques and Applications*, pages 292–298, 2007

[C10] Victor N. Epitropou, **Konstantinos M. Giannoutakis**, and George A. Gravvanis. Java multithreading based parallel preconditioned generalized conjugate gradient type methods. In *Parallel and Distributed Computing, 2007. ISPDC '07. Sixth International Symposium on*, pages 42–42, July 2007

[C9] George A. Gravvanis and **Konstantinos M. Giannoutakis**. On the performance of parallel normalized explicit preconditioned conjugate gradient type methods. In *Proceedings 20th IEEE International Parallel Distributed Processing Symposium*, April 2006

[C8] George A. Gravvanis, **Konstantinos M. Giannoutakis**, and Elias A. Lipitakis. Solving fully parameterized singularly perturbed non-linear parabolic and elliptic pde's by explicit approximate inverse fe matrix algorithmic methods. In *CD-ROM Proceedings of the Seventh Hellenic-European Conference on Computer Mathematics and Its Applications (HERCMA 2005), Athens*, pages 22–24, 2005

[C7] George A. Gravvanis, **Konstantinos M. Giannoutakis**, and Elias A. Lipitakis. On the numerical solution of fully parameterized singularly perturbed non-linear initial and boundary value problems. In *CD-ROM Proceedings of the 17th IMACS World Congress on Scientific Computation, Applied Mathematics and Simulation*, 2005

[C6] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Parallel approximate finite element inverse preconditioning on distributed systems. In *Third International Symposium on Parallel and Distributed Computing/Third International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks*, pages 277–283, July 2004

[C5] George A. Gravvanis, **Konstantinos M. Giannoutakis**, and Michail P. Bekakos. Parallel finite element approximate inverse preconditioning on symmetric multiprocessor systems. In *International Conference on Parallel and Distributed Processing Techniques and Applications*, pages 168–178, 2004

[C4] George A. Gravvanis and **Konstantinos M. Giannoutakis**. Normalized isomorphic preconditioned methods for solving sparse non-linear systems. In *Proceedings of the International Conference on Algorithmic Mathematics & Computer Science*, pages 362–369, 2004

[C3] George A. Gravvanis, Agapios N. Platis, **Konstantinos M. Giannoutakis**, John B. Violentis, and Elias A. Lipitakis. Performability evaluation of multitasking and multiprocessor systems by explicit approximate inverses. In *International Conference on Parallel and Distributed Processing Techniques and Applications*, pages 1324–1331, 2003

[C2] **Konstantinos M. Giannoutakis** and George A. Gravvanis. A normalized explicit preconditioned conjugate gradient method for solving sparse non-linear systems. In *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications-Volume 1*, pages 107–113. CSREA Press, 2002

[C1] George A. Gravvanis, Agapios N. Platis, John B. Violentis, and **Konstantinos M. Giannoutakis**. Performability evaluation of a replicated database system by explicit approximate inverses. In *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications-Volume 1*, pages 114–120. CSREA Press, 2002

6 Books

[B1] George A. Gravvanis, **Konstantinos M. Giannoutakis**, Christos K. Papadopoulos-Filelis. *Programming in modern computational systems: MPI, OpenMP, Pthreads, Cuda (In Greek)*. Papasotiriou publications, ISBN 978-960-491-058-8, 2012

[B2] George A. Gravvanis, **Konstantinos M. Giannoutakis**. *Programming using MATLAB (In Greek)*. Papasotiriou publications, ISBN 978-960-491-057-1, 2012

[B3] George A. Gravvanis, **Konstantinos M. Giannoutakis**. *Introduction to Mathematica (In Greek)*. Property Development and Management Company. Democritus University of Thrace, 2010

7 Invited Lectures

[1] Konstantinos M. Giannoutakis. Simulating Clouds, course of Simulation and Performance Evaluation, University of Trento, Italy, 18th May 2020.

[2] Konstantinos M. Giannoutakis. Resource Management in Heterogeneous Cloud Infrastructures, 4th Technology Forum, Technical Chamber of Greece Thessaloniki, 17th May 2017.

[3] Konstantinos M. Giannoutakis. Simulation of heterogeneous cloud infrastructures, The Sixth National Conference on Cloud Computing and Commerce (NC4), The Helix, DCU, Dublin, 11th April 2017.

[4] Konstantinos M. Giannoutakis. CloudLightning Simulator, The Sixth National Conference on Cloud Computing and Commerce (NC4), The Helix, DCU, Dublin, 11th April 2017.

8 Research Programs

8.1 European Research Programs

[P1] **nIoVe**, A novel Adaptive Cybersecurity Framework for the Internet-of-Vehicles, 2019: H2020-SU-ICT-01-2018, `https://www.niove.eu/`

[P2] **RECAP**, Reliable Capacity Provisioning and Enhanced Remediation for Distributed Cloud Applications, H2020-ICT-2016-2017: Cloud Computing, `https://recap-project.eu/`

[P3] **FORTIKA**, Cyber Security Accelerator for trusted SMEs IT Ecosystems, Horizon 2020/DS-SC7-2016, `http://fortika-project.eu/`

[P4] **GHOST**, Safe-Guarding Home IoT Environments with Personalised Real-time Risk Control, Horizon 2020/DS-SC7-2016, `https://www.ghost-iot.eu/`

[P5] **CloudLightning**, Self-Organising, Self-Managing Heterogeneous Cloud, Horizon 2020/ICT, `http://cloudlightning.eu/`

[P6] **S-CASE**, Scaffolding Scalable Software Services, FP7- Pervasive and Trusted Network and Service Infrastructures, http://www.scasefp7.eu.

[P7] **Maincode**, Maintenance and Life Cycle Asset Management, the CornerstOnes for Sustainable DevelopmEnt, European Territorial Cooperation Programme Greece-Bulgaria 2007-2013, http://maincode.eu.

[P8] **epSOS**, epSOS open NCP Implementation and Support, European Commission Competitiveness and Innovation Programme (CIP) within the ICT Policy Support Programme, http://www.epsos.eu.

[P9] **universAAL**, Universal open platform and reference Specification for Ambient Assisted Living, FP7-ICT, http://universaal.org.

[P10] **OASIS**, Ontological Framework for e-Inclusive Applications, FP7-ICT-IP, http://www.oasis-project.eu/.

8.2 National Research Programs

[P11] **ECOBUILDING**, Occupant Aware Optimization of Energy Efficient Enterprise Buildings, http://www.ecobuilding-project.gr/ecobuilding

[P12] **REMOTE/AAL**, Open platform for remote home health monitoring and intervention of elderly with chronic conditions living in rural and isolated areas, GSRT project AMBIENT ASSISTED LIVING (AAL) JOINT PROGRAMME, http://www.remote-project.eu.

9 Reviewer in International Journals

- Future Generation Computer Systems, Elsevier
- Simulation Modelling Practice and Theory, Elsevier
- European Journal of Operational Research, Elsevier
- Journal of Computational and Applied Mathematics, Elsevier
- The Journal of Supercomputing, Springer
- Journal of Cloud Computing, Springer
- International Journal of Web Information Systems, Emerald
- Mathematical Problems in Engineering, Hindawi
- Scientia Iranica, Elsevier
- IEEE Communications Letters, IEEE
- IEEE Access
- Computational and Structural Biotechnology Journal, Elsevier
- Computers, MDPI

- Sensors, MDPI
- Electronics, MDPI
- Sustainability, MDPI
- Technological Forecasting & Social Change, Elsevier
- Journal of Business Research, Elsevier
- Internet of Things and Cloud Computing, Science PG
- International Journal of Numerical Methods for Heat and Fluid Flow, Emerald
- Computers and Electrical Engineering, Elsevier
- Blockchain: Research and Applications, Elsevier
- Journal of Information Security and Applications, Elsevier
- Journal of Network & Computer Applications, Elsevier
- Internet Computing, IEEE
- Journal of Information Security and Applications, Elsevier
- IEEE Communications Magazine, IEEE
- Mathematics, MDPI
- Computer Science Review, Elsevier
- Measurement and Control, Sage

10 Committees in International Conferences

[1] Program Committee member of International Conference on Computational Science, London, United Kingdom, 21-13 June, 2022

[2] Program Committee member of 15th Workshop on Computer Aspects of Numerical Algorithms, Sofia, Bulgaria, 4-7 September, 2022

[3] Technical Program Committee member of the Computing 2022 conference, 14-15 July, 2022.

[4] Technical Program Committee member of the 6th International Conference on Smart Trends for Computing and Communications, 11-12 January 2022.

[5] Technical Program Committee member of the World Conference on Smart Trends in Systems, Security and Sustainability, 2021

[6] Scientific Committee member of the 4th International Conference on Applied Mathematics, Modeling and Simulation, Guangzhou, China, 17 - 18 September, 2021

[7] Program Committee member of 14th Workshop on Computer Aspects of Numerical Algorithms, 2 - 5 September, 2021

[8] Scientific Committee Member of the 2022 2nd International Conference on Cloud Computer, IoT and Intelligence System (CCIIS2022), Beijing, China, March 6-7, 2021

[9] Technical Program Committee Member of the Future Technologies Conference (FTC) 2021, Vancouver, 28-29 October, 2021

[10] Program Committee Member of the International Conference on INovations and Intelligent SysTems and Applications: INISTA 2021, Kocaeli, Turkey, August 25-27, 2021

[11] Program Committee Member of the 14th Workshop on Computer Aspects of Numerical Algorithms at 16th Conference on Computer Science and Information Systems, Sofia, Bulgaria, 2-5 September, 2021

[12] Workshop co-chair/organizer of the Recent Advances of Blockchain Technologies for Cybersecurity (BlockCybersec) for the 3rd International Conference on Blockchain (Blockchain-2020), Rhodes, Greece, 2-6 November, 2020

[13] Program Committee Member of the International Conference on INovations and Intelligent SysTems and Applications: INISTA 2020, Novi Sad, Serbia, 24-26 August, 2020

[14] Program Committee Member of the Eighth International Conference on Intelligent Systems and Applications: INTELLI 2019, Rome, Italy, 20/6-4/7, 2019

[15] Program Committee Member of the International Conference on INovations and Intelligent SysTems and Applications: INISTA 2019, Sofia, Bulgaria, 3-5 July, 2019

[16] Program Committee Member of the International Conference on Computational Science: ICCS 2019, Faro, Algarve, Portugal, 12-14 June, 2019

[17] Special Session Organizer of the Enabling Blockchain technologies for Intelligent Systems (EnBIS 2018) for the International Conference on INovations and Intelligent SysTems and Applications: INISTA 2018, Thessaloniki, Greece, 3-5 July, 2018

11 Evaluator in International and National Bodies

[1] Member of the ICT expert panel at Luxembourg National Research Fund (CORE programme), domain: ICT, Robotics and Space Resources

[2] Project evaluator at Operational Program Competitiveness, Entrepreneurship and Innovation (RESEARCH–CREATE–INNOVATE programme)

[3] Proposal evaluator at Luxembourg National Research Fund (CORE programme)

[4] Proposal evaluator at European Cooperation in Science and Technology (COST)

12 Professional Experience

2021-today: Assistant Professor, Department of Applied Informatics, School of Information Sciences, University of Macedonia, Greece.
2009-2021: Post-Doc Researcher at the Centre of Research and Technology Hellas, Information Technologies Institute, Thessaloniki, Greece.

2010-2014, 2017-2022: Adjunct Faculty Member at Hellenic Open University, School of Computer Science, Patras, Greece.
2012: Development activities of the Educational Content, Methodology and Technology Laboratory (e-CoMeT Lab) to support the educational work of the Hellenic Open University, e-CoMeT Lab, Hellenic Open University.
2013: Software Development for the project "epSOS open NCP Implementation and Support", GNOMON Informatics, Thessaloniki, Greece
2014: Development and Improvement of the e-learning platform developed in the project MAIN-CODE, ATLANTIS ENGINEERING A.E., Thessaloniki, Greece
2008: Trainer of High School Professors of Computer Science of East Macedonia and Thrace through the project PEEP, Panhelenic Scholar Network.
2007-2008: Adjunct Professor, Vocational Training Institute (IEK) of Xanthi, Course: Use of Computers

13 Teaching Experience

2021-2022: Discrete Mathematics, Department of Applied Informatics, University of Macedonia, Greece
2021-2022: Algorithms Analysis, Department of Applied Informatics, University of Macedonia, Greece
2021-2023: Linear Algebra, Department of Applied Informatics, University of Macedonia, Greece
2021-2023: Mathematical Calculus, Department of Applied Informatics, University of Macedonia, Greece
2020-2023: Mathematics for Computer Science I, Hellenic Open University, Greece.
2010-2014, 2017-2020: Introduction to Computer Science, Hellenic Open University, Greece.
2007-2008: Use of Computers, Vocational Training Institute (IEK) of Xanthi, Greece.
2006-2007: Scientific Computing and Software, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.
2006-2008: Structured Programming II, C++, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.
2005-2008: Programming with MATLAB, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.
2005-2008: Introduction to Computer Science, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.
2005-2007: Software technology, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.
2004-2005: High Performance Computing, Parallel Algorithms and Computational Complexity, Laboratory exercises, Department of Electrical and Computer Engineering, Democritus University of Thrace, Greece.

14 Online courses

[1] Development of course material as part of the CloudLightning team for the course "High Performance Computing in the Cloud" hosted in Future Learn platform. Primary contributions: "Parallel Computing Frameworks". Attended by more than 2,840 people. `https://www.futurelearn.com/courses/high-performance-computing-cloud`.

15 Languages

English: Excellent
Greek: Excellent

16 Scientific Interests

- Programming
- Algorithms analysis and design
- Scientific and parallel computing
- Parallel software
- Sparse matrix algorithms
- Computational methods
- Finite difference and finite element methods
- Cloud computing
- Simulation
- Intelligent software systems
- Service oriented architectures
- Cybersecurity
- Blockchain technologies
- Data mining, machine learning and deep learning