



# Vasilios N. Katsikis

## Curriculum Vitae

### Education

- 2009 **Postdoctoral Studies**, *Computational methods in ordered spaces with applications in Mathematical finance*, National Technical University of Athens, under the financial support of the State Scholarship Foundation (IKY).
- 2007 **PhD**, *Mathematical Analysis*, National Technical University of Athens.
- 2000 **Msc**, *Applied Mathematics*, National Technical University of Athens.
- 1997 **Diploma**, *Mathematics*, National and Kapodistrian University of Athens.

### Google Scholar Profile

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### Phd Thesis

Title *Positive bases in ordered subspaces with the Riesz Decomposition Property*.  
MSC2010 46B40, 46B15, 46B42, 06A06, 06F20.

### Academic Appointments

- 11/2019 - Associate Professor, Department of Economics, Division of Mathematics and present Informatics, National and Kapodistrian University of Athens.
- 02/2014 - Assistant Professor, Department of Economics, Division of Mathematics and 11/2019 Informatics, National and Kapodistrian University of Athens.
- 05/2010 - Assistant Professor, General Department of Mathematics, Technological 1/2014 Education Institute of Piraeus.
- 09/2009 - Assistant Professor (part-time), General Department of Mathematics, Tech- 05/2010 nological Education Institute of Piraeus.
- 10/2008 - Lecturer (part-time), National & Kapodistrian University of Athens, Depart- 02/2010 ment of Economics.

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- 09/2004 - Assistant Professor (part-time), Department of Applied Sciences, Technological Education Institute of Chalkis.  
07/2009
- 02/2004 - Assistant Professor (part-time), School of Pedagogical and Technological Education, Athens.  
02/2008
- 09/2000 - Teaching Assistant (part-time), School of Applied Mathematical and Physical Sciences, National Technical University of Athens.  
12/2006
- 09/2003 - Lecturer, Department of Informatics and Computer Technology, Technological Education Institute of Lamia.  
07/2005
- 09/2003 - Lecturer, Hellenic Naval Academy.  
08/2004

## Specialization and Research Interests

- Financial optimization problems via meta-heuristic algorithms
- Financial optimization problems via neural networks
- Zhang Neural Network (ZNN) construction for time-varying and time-invariant matrix inversion or generalized inversion.
- Linear Algebra, Numerical Linear Algebra, Computational methods for the Moore-Penrose generalized inverse. Applications in image restoration and signal processing.
- Scientific computing and computational methods in ordered vector spaces with applications in Mathematical Economics (Portfolio Insurance, Options Replication).
- Functional Analysis, Ordered Spaces, Generalized Wedges (Ordered Cones), Ordered subspaces with the Riesz Decomposition Property.

## Publications

### Journal Papers (# 64)

**2020** ↓

1. P.S. Stanimirovic, **V.N. Katsikis**, D. Gerontitis, A new varying-parameter design formula for solving time-varying problems, **Neural Processing Letters**, In Press, (2020).
  2. D. Motic, P.S. Stanimirovic, **V.N. Katsikis** Solvability of some constrained matrix approximation problems using core-EP inverses, **Computational and Applied Mathematics**, In Press, (2020).
  3. M.A. Medvedeva , T.E. Simos , Ch. Tsitouras , **V.N. Katsikis**, Direct Estimation of SIR model Parameters through Second Order Finite Differences, **Mathematical Methods in the Applied Science**, In Press, (2020).
  4. **V.N. Katsikis**, S.D. Mourtas. Optimal Portfolio Insurance under Nonlinear Transaction Costs. **Journal of Modeling and Optimization** (2020);12(2):117-124.  
<https://doi.org/10.32732/jmo.2020.12.2.117>
  5. M.A. Medvedeva, **V.N. Katsikis**, S.D. Mourtas, T.E. Simos. Randomized time-varying knapsack problems via binary beetle antennae search algorithm: Emphasis on applications in portfolio insurance. **Math Meth Appl Sci.** (2020); 1- 11.  
<https://doi.org/10.1002/mma.6904>
- IMPACT FACTOR: 1.626**
6. A. H. Khan, X. W. Cao, Li Shuai, Hu Bin and **V.N. Katsikis**, Quantum Beetle Antennae Search: A Novel Technique for The Constrained Portfolio Optimization Problem, **Science China-Information Sciences**, (2020).  
DOI: 10.1007/s11432-020-2894-9

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**IMPACT FACTOR: 3.304**

7. Dimitrios Gerontitis, L. Moysis, Predrag Stanimirović, **Vasilios N. Katsikis** and C. Volos, Varying-parameter finite-time zeroing neural network for solving linear algebraic systems, **Electronic Letters**, Vol. 56, 16, (2020).  
DOI: 10.1049/el.2019.4099

**IMPACT FACTOR: 1.343**

8. J. K. Sahoo, R. Behera, P.S. Stanimirovic and **V.N. Katsikis**, Computation of outer inverses of tensors using the QR decomposition, **Computational and Applied Mathematics** (2020).  
DOI: <https://doi.org/10.1007/s40314-020-01225-4>

**IMPACT FACTOR: 1.260**

9. **V.N. Katsikis**, S. D. Mourtas, Predrag S. Stanimirovic, Shuai Li, Xinwei Cao Time-varying minimum-cost portfolio insurance under transaction costs problem via Beetle Antennae Search Algorithm (BAS), **Applied Mathematics and Computation** 385 (2020).  
DOI: <https://doi.org/10.1016/j.amc.2020.125453>

**IMPACT FACTOR: 2.3**

10. A. H. Khan, X. W. Cao, **V.N. Katsikis**, P.S. Stanimirovic, I. Brajevic, S. Li, S. Kadry, Y. Nam, Optimal Portfolio Management for Engineering Problems Using Nonconvex Cardinality Constraint: A Computing Perspective, **IEEE Access**, 1-14 (2020).  
DOI: <https://doi.org/10.1109/ACCESS.2020.2982195>

**IMPACT FACTOR: 4.098**

11. A. H. Khan, X. W. Cao, S. Li, **V.N. Katsikis**, and L. F. Liao, BAS-ADAM: an ADAM based approach to improve the performance of beetle antennae search optimizer, **IEEE/CAA Journal of Automatica Sinica**, vol. 7, no. 2, pp. 461-471 (2020).  
DOI: <https://doi.org/10.1109/JAS.2020.1003048>

**2019 ↓**

12. J. K. Sahoo, R. Behera, P.S. Stanimirovic, **V.N. Katsikis**, and H. Ma, Core and core-EP inverses of tensors, **Computational and Applied Mathematics** (2019).  
DOI: <https://doi.org/10.1007/s40314-019-0983-5>

**IMPACT FACTOR: 1.260**

13. M. Zhou, J. Chen, P.S. Stanimirovic, **V.N. Katsikis**, H. Ma, Complex Varying-Parameter Zhang Neural Networks for Computing Core and Core-EP Inverse, **Neural Processing Letters**, (2019).  
DOI: <https://doi.org/10.1007/s11063-019-10141-6>

**IMPACT FACTOR: 2.591**

14. **V.N. Katsikis**, S. D. Mourtas, ORPIT: A Matlab Toolbox for Option Replication and Portfolio Insurance in Incomplete Markets, **Computational Economics** (2019).  
DOI: <https://doi.org/10.1007/s10614-019-09936-5>

**IMPACT FACTOR: 1.185**

15. P.S. Stanimirovic, **V.N. Katsikis**, S. Li, Higher-Order ZNN Dynamics, **Neural Processing Letters**, (2019).  
DOI: <https://doi.org/10.1007/s11063-019-10107-8>

**IMPACT FACTOR: 2.591**

16. P.S. Stanimirovic, A. Kumar, **V.N. Katsikis**, Further efficient hyperpower iterative methods for the computation of generalized inverses  $A_{T,S}^{(2)}$ , **RACSAM**,(2019). DOI: <https://doi.org/10.1007/s13398-019-00696-3>

**IMPACT FACTOR: 1.074**

17. H. Ma, N. Li, P.S. Stanimirovic, **V.N. Katsikis**, Perturbation theory for Moore–Penrose inverse of tensor via Einstein product, **Computational and Applied Mathematics**,(2019). DOI: <https://doi.org/10.1007/s40314-019-0893-6>

**IMPACT FACTOR: 1.260**

18. P.S. Stanimirovic, **V.N. Katsikis**, Z. Zhang, S. Li, J. Chen, M. Zhou, Varying-parameter Zhang neural network for approximating some expressions involving outer inverses, **Optimization Methods and Software**,(2019). DOI: <https://doi.org/10.1080/10556788.2019.1594806>

**IMPACT FACTOR: 1.183**

19. P.S. Stanimirovic, **V.N. Katsikis**, S. Srivastava, D. Pappas, A class of quadratically convergent iterative methods, **RACSAM**,(2019). DOI: <https://doi.org/10.1007/s13398-019-00681-w>

**IMPACT FACTOR: 1.074**

20. **V.N. Katsikis**, S. D. Mourtas, A heuristic process on the existence of positive bases with applications to minimum-cost portfolio insurance in  $C[a,b]$ , **Applied Mathematics and Computation** 349 (2019) 221–244.

**IMPACT FACTOR: 2.3**

21. P.S. Stanimirovic, **V.N. Katsikis**, S. Li, Integration enhanced and noise tolerant ZNN for computing various expressions involving outer inverses, **Neurocomputing**, 329 (2019) 129–143.

**IMPACT FACTOR: 3.241**

**2018 ↓**

22. M.D. Petkovic, P.S. Stanimirovic, **V.N. Katsikis**, Modified discrete iterations for computing the inverse and pseudoinverse of the time-varying matrix, **Neurocomputing**, 289 (2018), 155–165.

**IMPACT FACTOR: 3.241**

23. P.S. Stanimirovic, **V.N. Katsikis**, S. Li, Hybrid GNN-ZNN models for solving linear matrix equations, **Neurocomputing**, 316 (2018), 124–134.

**IMPACT FACTOR: 3.241**

24. P.S. Stanimirovic, **V.N. Katsikis** and D. Kolundzija, Inversion and pseudoinversion of block arrowhead matrices. **Applied Mathematics and Computation** 341 (2018), 379–401.

DOI:10.1016/j.amc.2015.10.023

**IMPACT FACTOR: 2.3**

25. P.S. Stanimirovic, M. Ciric, **V.N. Katsikis**, C. Li and H. Ma, Outer and (b,c) inverses of tensors, **Linear and Multilinear Algebra** (2018).

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DOI: <https://doi.org/10.1080/03081087.2018.1521783>

**IMPACT FACTOR: 0.835**

26. D. Pappas, **V.N. Katsikis** and P.S. Stanimirovic, The  $\lambda$ - Aluthge transform of EP matrices. **Filomat** 32:12 (2018).

**IMPACT FACTOR: 0.635**

27. D. Pappas, **V.N. Katsikis** and I. Stanimirovic, Symbolic Computation of the Duggal Transform, **Journal of Linear and Topological Algebra**, Vol. 07, No.01 (2018), 53 - 62.

**2017 ↓**

28. S. Srivastava, P.S. Stanimirovic, **V.N. Katsikis** and D.K. Gupta, A Family of Iterative Methods with Accelerated Convergence for Restricted Linear System of Equations, **Mediterranean Journal of Mathematics** (2017).

DOI 10.1007/s00009-017-1020-9

**IMPACT FACTOR: 1.000**

29. D. Pappas, **V.N. Katsikis** and I. Stanimirovic, Symbolic Computation of the Aluthge Transform, **Mediterranean Journal of Mathematics** (2017).

DOI 10.1007/s00009-017-0862-5

**IMPACT FACTOR: 1.000**

30. P.S. Stanimirovic, **V.N. Katsikis** and D. Pappas, Computation of  $\{2, 4\}$  and  $\{2, 3\}$ -inverses based on rank-one updates, **Linear and Multilinear Algebra** (2017).

DOI: 10.1080/03081087.2017.1290042

**IMPACT FACTOR: 0.835**

**2016 ↓**

31. P.S. Stanimirovic, **V.N. Katsikis** and H. Ma, Representations and properties of the W-Weighted Drazin inverse, **Linear and Multilinear Algebra** (2016).

DOI: 10.1080/03081087.2016.1228810

**IMPACT FACTOR: 0.835**

32. **V.N. Katsikis**, A new computational method for finding the cheapest hedge. **Facta Universitatis Ser. Math. Inform.** Vol. 31, No 2 (2016), 349-362.

33. P. S. Stanimirovic, **V.N. Katsikis**, I. Stojanovic, Computing the pseudo-inverse of specific Toeplitz matrices using rank-one updates. **Mathematical Problems in Engineering**, Volume 2016, Article ID 9065438, 16 pages.

DOI: 10.1155/2016/9065438 (2016).

**IMPACT FACTOR: 1.145**

34. **V.N. Katsikis**, Computation of replicated exercise prices by using positive bases. **Filomat**, 30:11 (2016), 2973-2984.

**IMPACT FACTOR: 0.635**

35. P.S. Stanimirovic, **V.N. Katsikis**, D. Pappas, Computing  $\{2, 4\}$  and  $\{2, 3\}$  - inverses by using the Sherman-Morrison formula. **Applied Mathematics and Computation** 273 (2016), 584-603.

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DOI:10.1016/j.amc.2015.10.023

**IMPACT FACTOR: 2.3**

36. **V.N. Katsikis**, S. N. Papakostas, S. Tsitmidelis, and Ch. Tsitouras, Evolutionary generation of explicit two step methods for second order linear IVPs. ICNAAM **2016** Proceedings. (AIP (**American Institute of Physics**) Conference Proceedings) (**Refereed Conference**).
37. **V.N. Katsikis**, An alternative computational method for finding the minimum-premium insurance portfolio. ICNAAM **2016** Proceedings. (AIP (**American Institute of Physics**) Conference Proceedings) (**Refereed Conference**).

**2015** ↓

38. S. Chountasis, D. Pappas, **V.N. Katsikis**, Signal watermarking in bi-dimensional representations using matrix factorizations, **Computational and Applied Mathematics (2015)**,

DOI: 10.1007/s40314-015-0230-7.

**IMPACT FACTOR: 1.260**

39. P.S. Stanimirovic, D. Pappas, **V.N. Katsikis**, M.S. Cvetkovic, Outer inverse restricted by a linear system **Linear and Multilinear Algebra (2015)**,

DOI: 10.1080/03081087.2015.1019200.

**IMPACT FACTOR: 0.835**

40. P. S. Stanimirovic, I. Stojanovic, **V.N. Katsikis**, D. Pappas, Z. Zdravev, Application of the Least Squares Solutions in Image Deblurring. **Mathematical Problems in Engineering**, Volume **2015**, Article ID 298689, 18 pages.

DOI: 10.1155/2015/298689

**IMPACT FACTOR: 0.961**

**2014** ↓

41. Ch. Tsitouras, **V.N. Katsikis**, Bounds for Variable Degree Rational  $L_\infty$  Approximations to the Matrix Cosine. **Computer Physics Communications**, 185 (**2014**), 2834–2840.

**IMPACT FACTOR: 3.748**

42. P.S. Stanimirovic, D. Pappas, **V.N. Katsikis**, Generalized inverse restricted by the normal Drazin equation. **Linear and Multilinear Algebra (2014)**,

DOI: 10.1080/03081087.2014.908873.

**IMPACT FACTOR: 0.835**

43. Ch. Tsitouras, **V.N. Katsikis**, Solving Undamped Unforced Free Oscillators by  $L_\infty$  Approximations to  $\cos$ . ICCMSE **2014** Proceedings. (AIP (**American Institute of Physics**) Conference Proceedings) (**Refereed Conference**).

**2013** ↓

44. **V.N. Katsikis** A new characterization of markets that don't replicate any option through minimal-lattice subspaces. A computational approach. **Filomat** 27:7 (**2013**), 1357–1372.

DOI 10.2298/FIL1307357K

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**IMPACT FACTOR: 0.635**

**2012** ↓

45. P.S. Stanimirovic, D. Pappas, **V.N. Katsikis**, I.P. Stanimirovic, Full-rank representations of outer inverses based on the QR decomposition. **Applied Mathematics and Computation** 218 (2012), 10321-10333.

DOI: 10.1016/j.amc.2012.04.011

**IMPACT FACTOR: 2.3**

46. P.S. Stanimirovic, D. Pappas, **V.N. Katsikis**, I. Stanimirovic, Symbolic computation of  $A_{T,S}^{(2)}$ -inverses using *QDR* factorization. **Linear Algebra and its Applications** 437 (2012), 1317-1331.

**IMPACT FACTOR: 0.973**

47. **V.N. Katsikis**, I. Polyrakis, Computation of vector sublattices and minimal lattice-subspaces of  $\mathbb{R}^k$ . Applications in finance. **Applied Mathematics and Computation** 218 (2012), 6860-6873.

DOI: 10.1016/j.amc.2011.12.062

**IMPACT FACTOR: 2.3**

48. S. Chountasis, **V.N. Katsikis**, D. Pappas, A. Perperoglou, The Whittaker Smoother and the Moore-Penrose Inverse in Signal Reconstruction. **Applied Mathematical Sciences** (2012), no.25, Vol.6, 1205-1219.

**2011** ↓

49. **V.N. Katsikis** and D. Pappas, The restricted weighted generalized inverse of a matrix, **Electronic Journal of Linear Algebra**, 22(2011), 1156-1167.

**IMPACT FACTOR: 0.739**

50. **V.N. Katsikis** Computational methods for option replication. **International Journal of Computer Mathematics**, Vol.88, No.13, September 2011, 2752-2769.

DOI: 10.1080/00207160.2011.555536

**IMPACT FACTOR: 1.054**

51. **V.N. Katsikis**, D. Pappas, A. Petralias, An improved method for the computation of the Moore-Penrose inverse matrix. **Applied Mathematics and Computation** 217(2011), 9828-9834.

DOI: 10.1016/j.amc.2011.04.080

**IMPACT FACTOR: 2.3**

**2010** ↓

52. S. Chountasis, **V.N. Katsikis**, D. Pappas, Digital image reconstruction in the spectral domain utilizing the Moore-Penrose inverse. **Mathematical Problems in Engineering**, Volume 2010, Article ID 750352, 14 pages.

DOI: 10.1155/2010/750352

**IMPACT FACTOR: 1.145**

**2009** ↓



53. **V.N. Katsikis**, A Matlab-based rapid method for computing lattice-subspaces and vector sublattices of  $\mathbb{R}^n$ . Applications in portfolio insurance. **Applied Mathematics and Computation** (215) (2009) 961-972.

**IMPACT FACTOR: 2.3**

54. S. Chountasis, **V.N. Katsikis**, D. Pappas, Applications of the Moore-Penrose Inverse in digital image restoration. **Mathematical Problems in Engineering** Volume 2009, Article ID 170724, 12 pages.

DOI: 10.1155/2009/170724.

**IMPACT FACTOR: 1.145**

55. **V.N. Katsikis**, The Riesz interpolation property for the space of continuously differentiable functions. **International Journal of Contemporary Mathematical Sciences**, 4(2009), no.16,799-802.

56. S. Chountasis, **V.N. Katsikis**, D. Pappas, Image restoration via fast computing of the Moore-Penrose inverse matrix. 2009 16th International Conference on Systems, Signals and Image Processing, IWSSIP 2009, **IEEE conference proceedings**, Article number 5367731, ISBN: 978-142444530-1 DOI: 10.1109/IWSSIP.2009.5367731 (**Refereed Conference**).

**2008** ↓

57. **V.N. Katsikis**, Computational methods in lattice-subspaces of  $C[a,b]$  with applications in portfolio insurance. **Applied Mathematics and Computation** (200) (2008) 204-219.

**IMPACT FACTOR: 2.3**

58. **V.N. Katsikis** and D. Pappas, Fast computing of the Moore-Penrose inverse matrix. **Electronic Journal of Linear Algebra**, 17(2008), 637-650.

**IMPACT FACTOR: 0.739**

59. **V.N. Katsikis**, Additive mappings between directed wedges with the Riesz interpolation property. **International Journal of Mathematical Analysis** (2)No.1 (2008), 11-25.

60. **V.N. Katsikis**, Methods on computing positive bases in finite dimensional vector sublattices. Applications in completion of security markets and in the theory of efficient funds. ICNAAM 2008 Proceedings. (AIP (**American Institute of Physics**) Conference Proceedings) (**Refereed Conference**).

**2007** ↓

61. **V.N. Katsikis**, Computational methods in portfolio insurance. **Applied Mathematics and Computation** (189) (2007) 9-22.

**IMPACT FACTOR: 2.3**

62. **V.N. Katsikis**, Generalized wedges and ordered spaces with the Riesz decomposition property. **Nonlinear Functional Analysis and Applications** (12)No.2 (2007) 205-217.

**2006** ↓

63. **V.N. Katsikis**, I.Polyrakis, Positive Bases in ordered subspaces with the Riesz Decomposition Property. **Studia Mathematica** (174) (2006) 233-253.

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## IMPACT FACTOR 0.535

64. **V.N. Katsikis**, C.Tsitouras, Computational methods in finite dimensional lattice-subspaces. An application in economics. **ICNAAM 2006 Proceedings**, 406-410 (**Refereed Conference**).

### Books (# 6)

A. Editor of the book entitled:

**"Applied Linear Algebra in Action (2016)".**

Available from the following link: [Click Me](#)

B. Editor of the 3 volumes book series entitled:

**"MATLAB, a Fundamental Tool for Scientific Computing and Engineering Applications, Intech Publications, 2012".**

Available from the following links:

**Volume 1:** [Click Me](#)

**Volume 2:** [Click Me](#)

**Volume 3:** [Click Me](#)

C.(In Greek) **V.N. Katsikis**, Linear Algebra for Business and Economics with Applications in MATLAB. Tsotras Publications, 2019.

D.(In Greek) **V.N. Katsikis**, S. Kotsios, General Mathematics for Business and Economics Volume II. Tsotras Publications, 2019.

### Book chapters (# 4)

1. **P. Stanimirovic, D. Pappas, V.N. Katsikis** (2015). Minimization of Quadratic Forms and Generalized Inverses, *Advances in Linear Algebra Research*, ISBN: 978-1-63463-565-3, Nova Science,  
**Available from:** [Click Me](#)
2. **S. Chountasis, V.N. Katsikis and D. Pappas** (2012). Image Reconstruction Methods for MATLAB Users - A Moore-Penrose Inverse Approach, *MATLAB - A Fundamental Tool for Scientific Computing and Engineering Applications - Volume 1*, ISBN: 978-953-51-0750-7, InTech,  
**Available from:** [Click Me](#)
3. **Vasilios N. Katsikis** (2012). MATLAB Aided Option Replication, *MATLAB - A Fundamental Tool for Scientific Computing and Engineering Applications - Volume 3*, ISBN 978-953-51-0752-1, InTech,  
**Available from:** [Click Me](#)
4. **Vasilios N. Katsikis** (2010). Computational and Mathematical Methods in Portfolio Insurance. A MATLAB-Based Approach. *Matlab - Modelling, Programming and Simulations*, ISBN: 978-953-307-125-1, InTech,

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**Available from:** Click Me

**Also:** The book "MATLAB-Modelling, Programming and Simulations" has been posted on the official web page of MathWorks - MATLAB CENTRAL. You can access the above mentioned web page by clicking on the following link:

<http://mathworks.com/matlabcentral/linkexchange/links/2759-matlab-modelling-programming-and-simulations>

## Reviewer of International Scientific Journals

- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Neural Networks and Learning Systems
- Neural Processing Letters
- Neurocomputing
- Applied Mathematics and Computation (Elsevier)
- Linear and Multilinear Algebra (Elsevier)
- Computational and Applied Mathematics(Springer)
- Mathematical Reviews
- Numerical Algorithms (Springer)
- Journal of Applied Mathematics and Computing (Springer)
- Applied Mathematics Letters (Elsevier)
- Journal of Computational and Applied Mathematics (Elsevier)
- Applicable Analysis and Discrete Mathematics.
- Journal of Computing in civil engineering (ASCE)
- International Journal of Applied Mathematics and Computer Science (AMCS)
- Journal of Applied Mathematics (Hindawi)
- Filomat
- Afrika Matematika (Springer)
- Applied Mathematics E-Notes
- International Journal of Open Problems in Computer Science and Mathematics(IJOPCM)
- International Journal of Contemporary Advanced Mathematics (IJCM)
- Facta Universitatis (Series Mathematics and Informatics)

## Editorial Board Member

- Journal of Finance, Business, Economics, Marketing and Information Systems.
- International Journal of Robotics and Control.

## Member of the Scientific Committee of Conferences

- The 5th International Scientific Conference, Analysis, Topology, Algebra: Theory And Applications (ATA 2016).
- 13th Serbian Mathematical Congress Vrnjačka Banja, May 22-25, 2014.
- 1st International Conference on Applications of Mathematics on Management, Finance, Production and Education. (2011)
- 16th International Conference on Systems, Signals and Image Processing, IWSSIP (2009)

## Keynote speaker

- International Conference on Advanced Robotics and Intelligent Control (ICARIC 2018), Jishou, Hunan Province, China. Title: Improving of Zhang Neural Network models for computing the matrix inverse by using hyperpower iterative methods.

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## Invited Presentations (Congresses, Meetings and Minisymposia)

- The 5th International Scientific Conference, Analysis, Topology, Algebra: Theory And Applications (ATA **2016**). Title: Computing  $\{2, 4\}$  and  $\{2, 3\}$ -inverses by using the Sherman-Morrison formula.
- 13th Serbian Mathematical Congress Vrnjačka Banja, May 22-25, **2014**. Title: A new computational tool for option replication.
- International Conference on Scientific Computation and Differential Equations (SciCADE 2013), September 16-20, **2013**, Valladolid (Spain). Minisymposium 14 - Efficient computation of matrix functions for exponential and trigonometric integrators. Organized by: Volker Grimm. Title: Rational  $L_\infty$  approximations to the matrix cosine. I. Fanelis, C. Tsitouras and V. Katsikis.
- 16th International Conference on Systems, Signals and Image Processing, IWSSIP **2009**, Title: Image restoration via fast computing of the Moore-Penrose inverse matrix.
- International Conference "Gene Around the World", Tripolis **2008**. Title: A new method for computing lattice-subspaces and vector sublattices of  $\mathbb{R}^n$ .
- Conference on "Scientific Computing", Kastoria, **2008**, Department of Informatics and Computer Technology(Kastoria), TEI of West Macedonia. Title: Effective Methods on Computing the Generalized Inverse of a Matrix.
- 8th International S.A.E.T. Conference on Current trends in economics & Emigration policies, Kos, **2007**. Purdue University - University of the Aegean. Title: Computational methods in portfolio insurance.
- Conference on "Mathematical Modeling and Computational Methods", Kastoria, **2007**, Department of Informatics and Computer Technology(Kastoria), TEI of West Macedonia. Title: Computational methods in portfolio insurance.
- International Conference on Numerical Analysis and Applied Mathematics(ICNAAM) **2006**. Official Conference of the European Society of Computational Methods in Sciences and Engineering(ESCMSE). Title: Computational methods in finite dimensional lattice-subspaces. An application in economics.

## Regular Talks and Presentations

- International Conference on Numerical Analysis and Applied Mathematics(ICNAAM), Rhodes 23-29 September **2015**. Official Conference of the European Society of Computational Methods in Sciences and Engineering(ESCMSE). Title: An alternative computational method for finding the minimum-premium insurance portfolio.
- International Conference on Recent Advances in Pure and Applied Mathematics (ICRAPAM 2015), 3-6 June **2015**, Istanbul Commerce University, Turkey. Title: A new method for the computation of  $\{2, 4\}$  and  $\{2, 3\}$ -inverses.
- Numerical Computations: Theory and Algorithms International Conference and Summer School, in cooperation with the Society for Industrial and Applied Mathematics (SIAM). 17- 23 June **2013**, Italy. Title: A computational study of option replication based on Riesz space theory.
- 1st International Conference on Applications of Mathematics on Management, Finance, Production and Education. 24-25 June **2011**, Athens. Title: The restricted weighted generalized inverse of a matrix application to the portfolio selection problem.
- International Conference on Numerical Analysis and Applied Mathematics(ICNAAM), Kos 16-20 September **2008**. Official Conference of the European Society of Computational Methods in Sciences and Engineering(ESCMSE). Title: Methods on computing positive bases in finite dimensional vector sublattices. Applications in completion of security markets and in the theory of efficient funds.

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- 12th Panhellenic Conference in Mathematical Analysis, Athens **2008**, University of Athens Department of Mathematics. Title: Fast Computation of lattice-subspaces and vector sublattices of  $\mathbb{R}^n$ .
- 8th Panhellenic Conference in Algebra Number Theory and Applications, Athens **2008**, National Technical University of Athens. Title: Fast computing of the Moore-Penrose Inverse Matrix.
- International Conference on Numerical Analysis and Applied Mathematics(ICNAAM),Krete 15-19 September **2006**. Official Conference of the European Society of Computational Methods in Sciences and Engineering(ESCMSE). Title: Computational methods in finite dimensional lattice-subspaces. An application in economics.
- 10th Panhellenic Conference in Mathematical Analysis, Athens **2004**, School of Applied Mathematical and Physical Sciences, National Technical University of Athens. Title: Ordered Subspaces with the Riesz Decomposition Property.
- 8th Panhellenic Conference in Mathematical Analysis, Xanthi, **2000**. Democritus University of Thrace. Title: Positive bases in ordered spaces.
- International Conference in Mathematical Analysis and its Applications, In Memorium Christos Papakyriakopoulos, **2000**. National Technical University of Athens. Title: The problem of existence of positive bases in ordered spaces.

## Visiting Professor

- Visiting Professor, University of Nis, Department of Computer Science, Serbia June 2018 and May 2019.

## Published Software

- Package for computing outer generalized inverses. Applied Mathematics and Computation (218) (2012).
- Symbolic package for the computation of  $A_{T,S}^{(2)}$ -inverses. Linear Algebra and its Applications (437) (2012).
- Package for the computation of maximal submarkets that replicate any option. International Journal of Computer Mathematics (2011).
- Package for the computation of the Moore-Penrose inverse. Applied Mathematics and Computation (2011).
- Package for portfolio insurance. Applied Mathematics and Computation (215) (2009).
- Symbolic package for the computation of lattice-subspaces of  $C[a, b]$ . Applied Mathematics and Computation (200) (2008).
- Determination of lattice-subspaces in  $\mathbb{R}^n$ . Applied Mathematics and Computation (189) (2007).

## Membership in Scientific Organizations

- Hellenic Mathematical Society(Membership code number 4956)
- International Association of Engineers(Membership code number 114182)

## Sponsored Research

- Higher-order hyperpower iterative methods for the computation of  $A_{T,S}^{(2)}$ . (SARG-NKUA, 2016-2017)
- Generalized inverses of matrices: Computational methods and applications in optimization. (SARG-NKUA, 2014-2015)
- Research Funding Program: ARCHIMEDES III. Investing in knowledge society through the European Social Fund (European Union (European Social Fund - ESF) and Greek na-

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tional funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF)). Title: Applications of Computational Intelligence in problems arising from Computational Mathematics, (2012-2015).

- Postdoctoral Studies, under the financial support of the State Scholarship Foundation (IKY) (February 2008-February 2009).
- Karatheodory Research Grant, National Technical University of Athens, Title: Ordered Spaces with the Riesz Decomposition Property(2007-2008).
- Lifelong Learning, TEI of Chalkis, Title: Scientific Computing and Contemporary Mathematical Software(2006).
- Research Grant, National Technical University of Athens, School of Applied Mathematical and Physical Sciences(2000-2001).
- Research Grant, National Technical University of Athens, School of Rural and Surveying Engineering(1999-2000).
- Research Grant, National Technical University of Athens, School of Chemical Engineering(1999).
- Research Grant, National Technical University of Athens, School of Rural and Surveying Engineering(1998).
- Research Grant, National Technical University of Athens, Title: Applications of Mathematical Analysis in Economics(1998).

## Honors

- Scholarship from the Greek State Scholarship Foundation(IKY) for Postdoctoral Studies(2008-2009).
- Scholarship from the Legacy of Papakyriakopoulos for Doctoral Studies, National Technical University of Athens(2000-2002).
- Thomaideio award for best journal publication at National Technical University of Athens (Awarded article: V.N. Katsikis, Computational methods in portfolio insurance, Applied Mathematics and Computation (189) (2007) 9-22).

## Teaching Experience 1999 - present

- Mathematical Finance with Applications in MATLAB I
- Mathematical Finance with Applications in MATLAB II
- Applied Mathematics and Quantitative Methods
- Mathematical Economics
- Mathematical Analysis
- Multivariable Calculus
- Linear Algebra
- Numerical Analysis
- Discrete Mathematics
- Differential Equations
- Applied Mathematics(Fourier Analysis, Complex Analysis Partial Differential Equations)
- Scientific computing
- Statistics in Business and Economics
- Laboratory Courses in Numerical Analysis with Matlab
- Laboratory Courses in Mathematical Analysis with Mathematica
- Digital Signal Processing
- Fortran
- Information Theory

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## Phd thesis supervision

- Spyridon Mourtas, Time-Varying Problems in Finance via Linear-Variational Inequality based Primal-Dual Neural Networks (Ongoing).

## Member of Phd thesis committees

- Ilias Kostarakos, Control theory applications for the design of fiscal policy, 2017 (Completed).
- Poullos Nikolaos, On the Stability of Random Matrices. (Ongoing).

## Master Thesis Supervision

- The RAS method in input-output analysis (Master Thesis) Babouri Efrosini (Completed).
- Input-Output Analysis and Social Accounting Matrices (SAM) (Master Thesis) Xristou Anastasia (Completed).
- Computation of replicated exercise prices by using positive bases (Master Thesis) Chroni Chrysa (Completed).
- Computational Methods for option replication (Master Thesis) Bakousi Konstantina (Completed).
- Error propagation during scientific calculations (Bachelor Thesis) Merges Pamagiotis (Completed).

## Languages

Greek	<b>Native</b>	<i>Mother Tongue</i>
English	<b>Fluent</b>	<i>Daily practice, part of teaching work and all research performed in English</i>