Curriculum Vitae

Stavros D. Nikolopoulos

Professor

Computer Science & Engineering

University of Ioannina

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Place of Birth: Pylos–Greece; Nationality: Greek; Marital Status: Married (three children); Military Service: Greek Air Force (1988–90).

Research Interests

- Design and Analysis of Algorithms - Graph Algorithms, Parallel Algorithms.

- Algorithmic Graph Theory - Perfect Graphs.

- Information Hiding - Codec Systems, Watermarking Algorithms.

- Implementation and Experimental Evaluation - Data Structures and Algorithms.

Education

- B.Sc Mathematics, University of Ioannina (1982); Specialization Field: Applied Mathematics and Computer Science.

- M.Sc Computer Science, University of Dundee, Department of Mathematics and Computer Science, UK (1985); M.Sc Thesis: Analysis of Event Set Algorithms.

- Ph.D Computer Science, University of Ioannina (1991); Ph.D Thesis: Parallel Algorithms for Problems on Perfect Graphs.

Scientific Activities

- Author of over fifty (50) scientific journal papers (single author in 6), and over seventy (80) papers in conference proceedings.

- Editor of scientific collections and conference proceedings; Translation of two (2) computer science textbooks; Author of two (2) computer science textbooks (in Greek).

- Teaching in graduate programs (1998–18); supervision of six (6) PhD theses and seventeen (17) MSc theses.

- Principal Investigator of research projects; Chairman and member of scientific committees.

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Academic Positions

1992–96	Lecturer, Department of Computer Science, University of Cyprus, Nicosia;
1996–02	Assistant Professor, Department of Computer Science, University of Ioannina (1996–00); Tenured Assistant Professor at the same Department (2000–02);
2002–08	Associate Professor, Department of Computer Science, University of Ioannina;
2008-now	Professor, Department of Computer Science & Engineering, University of Ioannina.

Scientific Contribution

- Continuous research activity through publications in international journals and conferences.

- Supervision of Ph.D theses; Member of advisory committees; External Ph.D thesis evaluator.

- Founder and Director of research lab at University of Ioannina.

- Principal Investigator of funded projects of basic research; Reviewer for scientific journals and research proposals. Organizer of scientific fora.

Administrative Work

- Member of the Board of Trustees of the University of Ioannina, 2012–16.

- Member of the Senate of the University of Ioannina, 2005–06 and 2006–10.

- Member of the Research Council of the University of Ioannina, 2005–08, 2008–11, and 2011–15.

- Member of the Scientific Committee of the research center "Research Center of Scientific Simulation (RCSS)" of the University of Ioannina, 2008–11.

- Chairman of the Department of Computer Science of the University of Ioannina, 2006–08 and 2008–10.

- Founder and Director of the research lab "Algorithms Engendering Lab" of the Department of Computer Science & Engineering, University of Ioannina, 2009–now.

- Director of the Graduate Studies Committee (MSc and PhD) of the Department of Computer Science & Engineering, University of Ioannina, 2010–16.

- Coordinator of the Undergraduate Studies Committee (BSc) of the Department of Computer Science, 1996–99 and 2001–04.

- Coordinator of the Financial Committee of the Department of Computer Science, 2004–06.

- Member of the Council of the Department of Computer Science of the University of Cyprus, 1994–96.

- Member of the Graduate Studies Committee (MSc and PhD) of the Department of Computer Science, University of Cyprus, 1994–96.

Member of Scientific Committees

- Member of the scientific committee of the Hellenic National Academic Recognition Information Center (Hellenic NARIC) for the recognition of foreign degrees in Computer Science (1998–now).

- Reviewer of Research Proposals funded by the European Union, National Councils, and University Research Councils.

- Member of scientific communities (ACM, SIAM).

Journals (Selected 2010-now)

1. A. Konstantinidis, S.D. Nikolopoulos, and C. Papadopoulos, "Strong Triadic Closure in Cographs and Graphs of Low Maximum Degree", *Theoretical Computer Science* (accepted), 2018.

2. Graphs using Self-inverting Permutations", *Discrete Appl. Mathematics* (accepted), 2018.

3. S.D. Nikolopoulos and I. Polenakis, "Preventing malware pandemics in mobile devices by establishing response-time bounds", *J. Information Security and Applications* 37(6): 1-14, 2017.

4. S.D. Nikolopoulos and I. Polenakis, "A graph-based model for malware detection and classification using system-call groups", *J. Computer Virology and Hacking Techniques* 13(1): 29-46, 2017.

5. L. Georgiadis, S.D. Nikolopoulos, and L. Palios, "Join-reachability problems in directed graphs", *Theory of Computing Systems* 55(2): 347-379, 2014.

6. S.D. Nikolopoulos, L. Palios, and C. Papadopoulos, "Counting spanning trees using modular decomposition", *Theoretical Computer Science* 526(1): 41-57, 2014.

7. M. Chroni, A. Fylakis, and S.D. Nikolopoulos, "Watermarking images in the frequency domain by exploiting self-inverting permutations", *Journal of Information Security* 4(2): 80-91, 2013.

8. K. Ioannidou and S.D. Nikolopoulos, "The longest path problem is polynomial on cocomparability graphs", *Algorithmica* 65(1): 177-205, 2013.

9. E. Lappas, S.D. Nikolopoulos, and L. Palios, "An $O(n)$-time algorithm for the paired-domination problem on permutation graphs", *European Journal of Combinatorics* 34(3): 593-608, 2013.

10. S.D. Nikolopoulos and L. Palios, "An $O(nm)$ certifying algorithm for recognizing HHD-free graphs", *Theoretical Computer Science* 452(1): 117-131, 2012.

11. S.D. Nikolopoulos, L. Palios, and C. Papadopoulos, "A fully dynamic algorithm for the recognition of P_4-sparse graphs", *Theoretical Computer Science* 439(1): 41-57, 2012.

12. K. Ioannidou, G.B. Mertzios, and S.D. Nikolopoulos, "The longest path problem has a polynomial solution on interval graphs", *Algorithmica* 61(2): 320-341, 2011.

13. S.D. Nikolopoulos and C. Papadopoulos, "A simple linear-time recognition algorithm for weakly quasi-threshold graphs", *Graphs and Combinatorics* 27(4): 557-565, 2011.

14. K. Asdre and S.D. Nikolopoulos, "The 1-fixed-endpoint path cover problem is polynomial on interval graphs", *Algorithmica* 58(3): 679-710, 2010.

15. K. Asdre and S.D. Nikolopoulos, "A polynomial solution to the k-fixed-endpoint path cover problem on proper interval graphs", *Theoretical Computer Science* 411(6-7): 967-975, 2010.

Conferences (Selected)

1. A. Mpanti and S.D. Nikolopoulos, "Graph-structured Watermarking using Bitonic Sequences of Self-inverting Permutations", *20th Panhellenic Conference on Info (PCI'16)*, ACM ICPS Proceedings, 2016.

2. S.D. Nikolopoulos and I. Polenakis, "A graph-based model for malicious code detection exploiting dependencies of system-call groups", *16th Int'l Conference on Computer Systems and Technologies (CompSysTech'15)*, ACM ICPS Proceedings, 2015.

3. M. Chroni, A. Fylakis, and S.D. Nikolopoulos, Watermarking digital images in the frequency domain: performance and attack issues, Book LNBIP 189, Chapter No 5, 2014.

4. M. Chroni, A. Fylakis, and S.D. Nikolopoulos, "From image to audio watermarking using self-inverting permutations", *10th Int'l Conference on Web Information Systems and Technologies (WEBIST'14)*, SciTePress Digital Library, 2014.

5. I. Chionis, M. Chroni, and S.D. Nikolopoulos, "A dynamic watermarking model for embedding reducible permutation graphs into software", *10th Int'l Conference on Security and Cryptography (SECRYPT'13)*, SciTePress Digital Library, 2013.

6. M. Chroni and S.D. Nikolopoulos, "An efficient graph codec system for software watermarking", *36th Int'l Conference on Computers, Software, and Applications (COMPSAC'12); Workshop STPSA'12*, IEEE Proceedings, 2012.

7. L. Georgiadis, S.D. Nikolopoulos, and L. Palios, "Join-reachability problems in directed graphs", *6th Int'l Computer Science Symposium in Russia (CSR'11)*, LNCS 6651, pp. 195–208, 2011.

8. K. Ioannidou and S.D. Nikolopoulos, "The longest path problem is polynomial on cocomparability Graphs", *36th Int'l Workshop on Graph-Theoretic Concepts in Computer Science (WG'10)*, LNCS 6410, pp. 27–38, 2010.

9. K. Ioannidou, G.B. Mertzios, and S.D. Nikolopoulos, "The longest path problem is polynomial on interval graphs", *34th Int'l Symposium on Mathematical Foundations of Computer Science (MFCS'09)*, LNCS 5734, pp. 403–414, 2009.

10. D. Koukopoulos, S.D. Nikolopoulos, L. Palios, and P.G. Spirakis, "Optimal algorithms for detecting network stability", *2ed Int'l Workshop on Algorithms and Computation (WALCOM'08)*, LNCS 4921, pp. 188–199, 2008.

11. D. Koukopoulos and S.D. Nikolopoulos, "Heterogenous networks can be unstable at arbitrarily low injection rates", *6th Conference on Algorithms and Complexity (CIAC'06)*, LNCS 3998, pp. 93–104, 2006.

12. S.D. Nikolopoulos and L. Palios, "Recognizing HHDS-free graphs", *31st Int'l Workshop on Graph-Theoretic Concepts in Computer Science (WG'05)*, LNCS 3787, pp. 456–467, 2005.

13. S.D. Nikolopoulos and L. Palios, "Hole and antihole detection in graphs", *15th ACM-SIAM Symposium on Discrete Algorithms (SODA'04)*, Vol. 1, pp. 843–852, 2004.

14. S.D. Nikolopoulos and L. Palios, "On the recognition of P_4-comparability graphs", *28th Int'l Workshop on Graph-Theoretic Concepts in Computer Science (WG'02)*, LNCS 2573, pp. 355–366, 2002.

15. S.D. Nikolopoulos, A. Pitsillides, and D. Tipper, "Addressing network survivability issues by finding the K-best paths through a trellis graph", *IEEE Conference on Computer Communications (INFOCOM'97)*, Vol. 1, pp. 370–377, 1997.

Books

- S.D. Nikolopoulos, L. Georgiadis, and L. Palios, *Algorithmic Graph Theory*, (ebook) Athens: Hellenic Academic Libraries Link, ISBN: 978-960-603-365-0, 2016.

- L. Georgiadis, S.D. Nikolopoulos, and L. Palios, *Data Structures*, (ebook) Athens: Hellenic Academic Libraries Link, ISBN: 978-960-603-477-0, 2016.

- S.D. Nikolopoulos and L. Palios; Translation into Greek of: A. Biermann, *Great Ideas in Computer Science: A Gentle Introduction*, MIT Press (2ed edition) 1997; Crete University Press, 2008.

- P. Fragopoulou, S.D. Nikolopoulos, and L. Palios; Translation into Greek of: T. Cormen, C. Leiserson, R. Rivest and C. Stein, *Introduction to Algorithms*, MIT Press (2ed edition) 2001; Crete University Press (Vol. I), 2006.

Graduate Students – PhD and MSc Supervision

- Advisor of six (6) PhD students at University of Ioannina

A. Mpanti	Graph-based Algorithmic Techniques for Information Hiding (on going);
I. Polenakis	Detection and Classification of Digital Objects using Graph Similarity Techniques (on going);
M. Chroni	Algorithmic Techniques for Encoding Permutations and Permutation Graphs for Watermarking Software, Image, Audio, and Text, 2014;
K. Ioannidou	New Classes of Perfect Graphs and Algorithms for Coloring and Longest Path Problems, 2009;
K. Asdre	Algorithms and NP-completeness Results on the Path Cover Problem with Fixed End-points, 2008;
C. Papadopoulos	Algorithms on Classes of Perfect Graphs, 2005;

- Advisor of fifteen (15) MSc students at University of Ioannina (1998–2018).

Graduate Courses

- Graduate Courses at the Department of Computer Science & Engineering, University of Ioannina:

  o Algorithmic Graph Theory (2005–07, 2008–18)

  o Synthesis of Parallel Algorithms (1998–2001)

  o Topics on Algorithms (2001–02, 2004–05)

  o Parallel Graph Algorithms (2002–04, 2007–08)

Research and other Activities

- External PhD Theses Committee. F. Mancini, "Graph Modification Problems Related to Graph Classes", PhD Thesis, University of Bergen, Norway, 2008; Committee: P. Heggernes (advisor), M. Habib, and S.D. Nikolopoulos.

- Invited talk at the Expert Workshop on "Graph Classes and Graph Algorithms", Caesarea Rothschild Institute, Haifa, Israel, 25-30 April 2004.

- Invited talk on "Linear-time algorithms for graph problems on a class of perfect graphs", Department of Software Science, Tallinn University of Technology, Tallinn, Estonia, 26 March 2018.

- Best Paper Award for the work "A Model for Establishing Response-time Bounds to Prevent Malware Pandemics in Mobile Devices" (with I. Polenakis), CompSysTech'17, ACM ICPS, 2016.

- Best Paper Award for the work "Watermarking images in the frequency domain by exploiting self-inverting permutations" (with M. Chroni and A. Fylakis), WEBIST'13, SciTePress Digital Library, 2013.

- Best Paper Award for the work "Encoding watermark numbers as cographs using self-inverting permutations" (with M. Chroni), CompSysTech'11, ACM ICPS, 2011.

- Reviewer of international journals (Algorithmica, SIAM Journal on Computing, Journal of Graph Theory) and conferences (SODA, WG, INFOCOM).

Basic Research I

- Projects funded by the European Union (EU), the General Secretariat for Research and Technology (GSRT), and Public Benefit Foundations:

  o UCY 1993: Design and Analysis of Parallel Algorithms for Graph Theoretic Problems, Principal Co-investigator (with F. Harary); 1993-96.

  o UoI DAKARIS I: Design and Analysis of Parallel Recognition and Optimization Algorithms for Perfect Graphs, Principal Investigator; 1999-00.

  o HRAKLITOS: Parellel Algorithms in Classes of Perfect Graphs, Principal Investigator (graduate student: Ch. Papadopoulos); 2002-05.

  o PYTHAGORAS II: Sequential and Parallel Algorithms in Classes of Perfect Graphs, Principal Investigator (post-graduate student: D. Koukopoulos); 2005-08.

  o PENED-05: Design and Implementation of Efficient Algorithms for Recognition and Optimization Problems in Perfect Graphs, Principal Investigator (graduate students: K. Asdre and K. Ioannidou); 2005-09.

  o PABET 2005: An Integrated Environment for Usability Evaluation of Product Interfaces (iSIM), Principal Co-investigator (coordinator: NIKI SA); 2006-08.

  o JOHN S. LATSIS RESEARCH PROJECTS: Efficient Algorithms for Reachability and Path-Selection Problems, Funded by the John S. Latsis Public Benefit Foundation; Principal Co-investigator (with L. Georgiadis); 2009-10.

  o EMPEIRIKEIO FOUNDATION: Network Connectivity Problems: Algorithms, Complexity, and Applications, Funded by the John S. Latsis Public Benefit Foundation; Principal Coordinator (with L. Georgiadis); 2012-13.

Thematic Networks

- Representative of the University of Ioannina and Participation in Projects funded by the European Union:

  o ETN-13: Future Education and Training in Computing: How to support learning at anytime anywhere (FETCH); 2013-16.

  o ETN-09: Teaching, Research and Innovations in Computing Education (TRICE); 2009-11.

  o TN-05: Doctoral Education in Computing (DEC); 2005-09.

  o TN-99: European Computing Education and Training (ECET); 1999-05.

- Coordinator of the ERASMUS Mobility Program between the Department of Computers Science & Engineering of the University of Ioannina and the following Universities:

  o CURRENT: University of Tallinn, Estonia (2016-20), University of Nicosia, Cyprus (2017-21).
  o PAST: Lund University, Sweden (1999-02), University of Bucharest, Romania (1998-99), University of Cyprus, Cyprus (1999-02, 2010-13).

Stavros D. Nikolopoulos

May 2018