

Publications

Book Chapters

[B1] Sotiris Ioannidis, Athanasios Papathanasiou, Gregorios Maglis, Evangelos Markatos, Dionisios Pnevmatikatos, and Julia Sevaslidou, "On Using Reliable Network RAM in Networks of Workstations", *Cluster Computing*, pp. 109-121, Chapter 10, 2001, ISBN 1-59033-113-3, Nova Science Publishers, USA.

[B2] George Kornaros, Ioannis Papaeystathiou, and Dionisios Pnevmatikatos, "Real-time Monitoring and Diagnostic Services for Networks-on-Chip", Chapter 9, *Networks-on-Chips: Theory and Practice*, In Press, Publisher: Taylor & Francis Group LLC - CRC Press, Editors: Fayez Gebali, Haytham Elmiligi, and M.Watheq El-Kharashi.

[B3] Koen De Bosschere, Wayne Luk, Xavier Martorell, Nacho Navarro, Mike O'Boyle, Dionisios Pnevmatikatos, Alex Ramirez, Pascal Sainrat, André Sez nec, Per Stenström, Olivier Temam, "High-Performance Embedded Architecture and Compilation Roadmap", *Transactions on High-Performance Embedded Architectures and Compilers*. Springer-Verlag. Vol. 1 (1). 2007. pp. 5-29.

Journal Publications

[J1] Jeffrey D. Gee, Mark D. Hill, Dionisios N. Pnevmatikatos, and Alan J. Smith, "Cache Performance of the SPEC92 Benchmark Suite", *IEEE Micro*, August 1993.

[J2] Georgios Kornaros, Dionisios Pnevmatikatos, Panagiota Vatsolaki, Georgios Kalokerinos, Chara Xanthaki, Dimitrios Mavroidis, Dimitrios Serpanos, and Manolis Katevenis, "Implementation of ATLAS I: a Single-Chip ATM Switch with Backpressure", *IEEE Micro*, vol. 19, n. 1, pp. 30-41, February 1999.

[J3] Sotiris Ioannidis, Athanasios Papathanasiou, Gregorios Maglis, Evangelos Markatos, Dionisios Pnevmatikatos, and Julia Sevaslidou, "On Using Reliable Network RAM in Networks of Workstations", *Parallel and Distributed Computing Practices (PDCP)*, Special Issue on High Performance Computing Clusters, Vol. 2, No. 5, Nova Science Publishers, USA, May 1999.

[J4] Dionisios Pnevmatikatos, Evangelos Markatos, Gregory Maglis, and Sotiris Ioannidis, "On Using Network RAM as a non-volatile Buffer", *Cluster Computing: The Journal on Networks, Software and Applications*, Special Issue on I/O in Shared-Storage Clusters, (4), pp. 295-303, Baltzer Science Publishers, 1999.

[J5] Evangelos Markatos, Dionisios Pnevmatikatos, Michail Flouris and Manolis Katevenis, "Secondary Storage Management for Web Proxies," *IEEE Transactions On Networking (TON)*, Vol. 10, No 6, December 2002.

[J6] Dionisios Pnevmatikatos, Ioannis Sourdis and Kyriakos Vlachos, "An Efficient and Low-Cost Input/Output Subsystem for Network Processors", *IEEE Design and Test of Computers*, Vol. 20, no. 4, pp. 56-64, July 2003.

[J7] Ioannis Papaefstathiou, Stylianos Perissakis, Theofanis G. Orphanoudakis, Nikos A. Nikolaou, George Kornaros, Nicholas A. Zervos, George Konstantoulakis, Dionisios N. Pnevmatikatos, and Kyriakos Vlachos, "PRO3: A Hybrid NPU Architecture", *IEEE Micro*, Vol. 24, no. 5, pp. 20-33, September/October 2004.

- [J8] Kyriakos Vlachos, Theofanis Orphanoudakis, Yannis Papaefthiou, Nikolaos Nikolaou, Dionisios Pnevmatikatos, George Konstantoulakis, J. A. Sanchez-P., ``Design and performance evaluation of a Programmable Packet Processing Engine (PPE) suitable for high-speed network processors units'', *Journal of Microprocessors and Microsystems*, vol. 31, no 3, 2007.
- [J9] Ioannis Sourdis, Dionisios N. Pnevmatikatos, Stamatis Vassiliadis, ``Scalable multigigabit pattern matching for packet inspection'', *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, Volume 16 , Issue 2 (February 2008).
- [J10] Manolis Katevenis, Vassilis Papaefstathiou, Stamatis G. Kavadias, Dionisios N. Pnevmatikatos, Federico Silla, Dimitrios S. Nikolopoulos, ``Explicit Communication and Synchronization in SARC''. *IEEE Micro*, vol 30, no 5, pp. 30-41, 2010.

Conference Publications (Refereed):

- [C1] Dionisios N. Pnevmatikatos, Manoj Franklin, and Gurindar S. Sohi, ``Control Flow Prediction for Dynamic ILP Processors,'', *Proceedings of the 26th Annual International Symposium on Microarchitecture (MICRO-26)*, December 1993, IEEE/ACM.
- [C2] Dionisios N. Pnevmatikatos and Gurindar S. Sohi, ``Guarded Execution and Branch Prediction in Dynamic ILP Processors,'', *Proceedings of the 21st Annual International Symposium on Computer Architecture (ISCA-21)*, April 1994, IEEE/ACM.
- [C3] Todd M. Austin, Dionisios N. Pnevmatikatos, and Gurindar S. Sohi, ``Streamlining Data Cache Access with Fast Address Calculation,'', *Proceedings of the 22nd Annual International Symposium on Computer Architecture (ISCA-22)*, June 1995, IEEE/ACM.
- [C4] Georgios Kornaros, Dionisios Pnevmatikatos, Panagiota Vatsolaki, Georgios Kalokerinos, Chara Xanthaki, Dimitrios Mavroidis, Dimitrios Serpanos, and Manolis Katevenis, ``Implementation of ATLAS I: a Single-Chip ATM Switch with Backpressure'', *Proceedings of the Hot Interconnects VI Symposium*, August 1998.
- [C5] Dionisios Pnevmatikatos, Georgios Kornaros, G. Kalokerinos, and Chara Xanthaki, ``The Memory Structures of ATLAS I, a High Performance, 16x16 ATM Switch Supporting Backpressure,'', *Proceedings of the 11th Annual 1998 IEEE International ASIC Conference*, September 1998.
- [C6] Georgios Kornaros, Dionisios Pnevmatikatos, Dimitrios Mavroidis, Peni Vatsolaki, George Kalokerinos, Chara Xanthaki, Georgios Dimitriadis, ``On Optimizing ATLAS I, A 10 Gbps ATM Switch,'', *Proceedings of the 7-th Hellenic Conference on Informatics*, Ioannina, Greece, August 26-29, 1999, pp. IV.50-IV.60.
- [C7] Dionisios Pnevmatikatos and Georgios Kornaros, ``ATLAS II: Optimizing a 10Gbps Single-chip ATM Switch,'', *12th Annual 1999 IEEE International ASIC/SOC Conference*, Washington, DC, USA, September 15-18, 1999, IEEE.
- [C8] Evangelos Markatos, Manolis Katevenis, Dionisios Pnevmatikatos and Michail Flouris, ``Secondary Storage Management for Web Proxies,'', *Proceedings of the 2nd USENIX Symposium on Internet Technologies and Systems (USITS '99)*, Boulder, CO, USA, October 12-13, 1999, USENIX.
- [C9] Apostolos Dollas, Dionisios Pnevmatikatos, Nikolaos Aslanides, Stamatis

Kavvadias, Euripides Sotiriades, Sotirios Zogopoulos, Kyprianos Papademetriou, Architecture and Applications of PLATO, a Reconfigurable Active Network Platform, *Proceedings, 9th International IEEE Symposium on Field-Programmable Custom Computing Machines (FCCM-2001)*, Rohnert Park, CA, April 30 - May 2, 2001, IEEE.

[C10] Apostolos Dollas, Nikolaos Aslanides, Stamatios Kavvadias, Euripides Sotiriades, Kyprianos Papademetriou, Dionisios N. Pnevmatikatos, Rapid Prototyping of a Reusable 4x4 Active ATM Switch Core with the PCI Pamette, *Proceedings, 12th International IEEE Workshop on Rapid System Prototyping (RSP-2001)*, pp. 17-23, Monterey, CA, June 25-27, 2001, IEEE.

[C11] Andreas Moshovos, Dionisios Pnevmatikatos, Amirali Baniasadi, "Slice-Processors: An Implementation of Operation-based Prediction", *Proceedings of the 15th ACM International Conference on Supercomputing (ICS)*, Sorrento, Naples, Italy, June, 16 - 21, 2001, ACM.

8

[C12] Apostolos Dollas, Dionisios Pnevmatikatos, Nikolaos Aslanides, Euripides Sotiriades, Stamatios Kavvadias, Sotirios Zogopoulos, "Experimental Testing of PLATO, a Reconfigurable Active ATM Network Node", *Proceedings of the 8th Panhellenic Informatics Conference*, Cyprus, November, 2001.

[C13] K. Vlachos, T. Orphanoudakis, N. Nikolaou, S. Perissakis, D. Pnevmatikatos, G. Kornaros, J.A. Sanchez and G. Konstantoulakis, "Processing and Scheduling Components in an Innovative Network Processor Architecture", *Proceedings of the International Conference on VLSI Design*, New Dehli, India, January 4-8, 2003. (7 pages) IEEE, ACM.

[C14] Ioannis Sourdis Dionisios Pnevmatikatos, and Kyriakos Vlachos, "An Efficient and Low-Cost Input/Output Subsystem for Network Processors", *Workshop on Application Specific Processors (WASP-1)*, November 19, 2002, Istanbul, Turkey (8 pages).

[C15] George Lykakis, Nikolaos Mouratidis, George Konstantoulakis, Kyriakos Vlachos, Nikolaos Nikolaou, Stylianos Perissakis, Ioannis Sourdis, Dionisios Pnevmatikatos, Dionisios Reisis, "Efficient Field Processing Cores In An Innovative Protocol Processor System-On-Chip", *Design Automation and Test Europe (DATE)*, March 3-7, 2003, Munich, Germany.

[C16] Ioannis Sourdis and Dionisios Pnevmatikatos, "Fast, Large-Scale String Match for a 10Gbps FPGA-based Network Intrusion Detection System", *13th International Conference on Field Programmable Logic and Applications (FPL)*, September 1-3, 2003, Lisbon – Portugal.

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[C18] Ioannis Sourdis, and Dionisios Pnevmatikatos, "Pre-decoded CAMs for Efficient and High-Speed NIDS Pattern Matching", *Proceedings of the Twelfth Annual IEEE Symposium on Field Programmable Custom Computing Machines (FCCM)*, April 20 - 23, 2004, Napa, California, USA.

[C19] Vassilios Dimopoulos, Giorgos Papadopoulos and Dionisios Pnevmatikatos, "On the Importance of Header Classification in HW/SW Network Intrusion Detection Systems", *Proceedings of the 10th Panhellenic Conference on Informatics (PCI)*, November 11-13, 2005, Volos, Greece. *Lecture Notes in Computer Science, Vol. 3746, "Advances in Informatics"* P. Bozanis and E.

Houstis (Eds.), 2005, XIX, ISBN-10: 3-540-29673-5

[C20] Ioannis Sourdis, Dionisios Pnevmatikatos, Stephan Wong, and Stamatis Vassiliadis, "A Reconfigurable Perfect-Hashing Scheme for Packet Inspection", Proceedings of the 15th International Conference on Field Programmable Logic and Applications (FPL), August 24-26, 2005, Tampere, Finland.

[C21] Giorgos Papadopoulos and Dionisios Pnevmatikatos, "Hashing + Memory = Low Cost, Exact Pattern Matching", Proceedings of the 15th International Conference on Field Programmable Logic and Applications (FPL), August 24-26, 2005, Tampere, Finland.

[C22] Aggelos Arelakis and Dionisios Pnevmatikatos, "Variable-Length Hashing for Exact Pattern Matching", Proceedings of the 16th International Conference on Field Programmable Logic and Applications (FPL), August 28-30, 2006, Madrid, Spain.

[C23] Ioannis Sourdis, Vasilis Dimopoulos, Dionisios Pnevmatikatos, and Stamatis Vassiliadis, "Packet Pre-filtering for Network Intrusion Detection", Proceedings of the ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS) December 4-5, 2006, San Jose, USA.

[C24] Ioannis Mavroidis, Ioannis Papaefstathiou and Dionisios Pnevmatikatos, "Hardware Implementation of 2-Opt Local Search Algorithm for the Travelling Salesman Problem", RSP '07: Proceedings of the 18th IEEE/IFIP International Workshop on Rapid System Prototyping, June 2007.

[C25] George Michelogiannakis and Dionisios Pnevmatikatos and Manolis Katevenis, "Approaching Ideal NoC Latency with Pre-Configured Routes", NOCS '07: Proceedings of the First International Symposium on Networks-on-Chip, 2007.

[C26] Ioannis Mavroidis and Ioannis Papaefstathiou and Dionisios Pnevmatikatos, "A Fast FPGA-Based 2-Opt Solver for Small-Scale Euclidean Traveling Salesman Problem", FCCM '07: Proceedings of the 15th Annual IEEE Symposium on Field-Programmable Custom Computing Machines, 2007.

[C27] Vassilis Dimopoulos, Ioannis Papaefstathiou, Dionisios N. Pnevmatikatos, "A Memory-Efficient Reconfigurable Aho-Corasick FSM Implementation for Intrusion Detection Systems", Proceedings of the 2007 International Conference on Embedded Computer Systems: Architectures, Modelling and Simulation (IC-SAMOS 2007), Samos, Greece, July 16-19, 2007.

[C28] Vassilis Papaefstathiou, Dionisios N. Pnevmatikatos, Manolis Marazakis, Giorgos Kalokairinos, Aggelos Ioannou, Michael Papamichael, Stamatis Kavadias, Giorgos Mihelogiannakis, Manolis Katevenis, "Prototyping Efficient Interprocessor Communication Mechanisms", Proceedings of the 2007 International Conference on Embedded Computer Systems: Architectures, Modelling and Simulation (IC-SAMOS 2007), Samos, Greece, July 16-19, 2007.

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[C30] Sotiria Fytraki, Dionisios Pnevmatikatos, "ReSim, a Trace-Driven, Reconfigurable ILP Processor Simulator", In Proceedings, Design, Automation and Test Europe, 20-24 April 2009, Nice, France.

[C31] Panagiotis Afratis, Constantinos Galanakis, Euripides Sotiriades, Georgios-Grigorios Mplemenos, Grigorios Chrysos, Yiannis Papaefstathiou, Dionisios

Pnevmatikatos, "Design and Implementation of a Database Filter for BLAST Acceleration", In Proceedings, Design, Automation and Test Europe, 20-24 April 2009, Nice, France.

[C32] George Kalokerinos, Vassilis Papaefstathiou, George Nikiforos, Stamatis Kavadias, Manolis Katevenis, Dionisios Pnevmatikatos and Xiaojun Yang, "FPGA Implementation of a Configurable Cache/Scratchpad Memory with Virtualized User-Level RDMA Capability", Proceedings of the 2009 International Conference on Embedded Computer Systems: Architectures, Modelling and Simulation (IC-SAMOS 2009), Samos, Greece, July 20-23, 2009.

[C33] Konstantinos Kyriakoulakos, Dionisios Pnevmatikatos, "A Novel SRAMBased FPGA Architecture for Efficient TMR Fault Tolerance Support", Proceedings of the 19th International Conference on Field Programmable Logic and Applications (FPL), August 31-September 2, 2009, Prague, Czech Republic.

[C34] Dimitrios Kontos, Ioannis Papaefstathiou, Dionisios Pnevmatikatos, "Design Space Exploration of Reconfigurable Systems for Calculating Flying Object's Optimal Noise Reduction Paths", Proceedings of the 19th International Conference on Field Programmable Logic and Applications (FPL), August 31-September 2, 2009, Prague, Czech Republic.

[C35] K. Siozios, D. Soudris, and D. Pnevmatikatos, "A Framework for Enabling Fault Tolerance in Reconfigurable Architectures", Proceedings of the 6th International Symposium on Applied Reconfigurable Computing (ARC), pp. 257-268, March 2010.

[C36] G. Passas, M. Katevenis, D. Pnevmatikatos: "A 128x128x24Gb/s Crossbar, Interconnecting 128 Tiles in a Single Hop, and Occupying 6% of their Area", Proceedings, of the 4th ACM/IEEE International Symposium on Networks-on-Chip (NOCS 2010), 3-6 May 2010, pp.

[C37] M. Katevenis, V. Papaefstathiou, S. Kavadias, D. Pnevmatikatos, F. Silla, D. Nikolopoulos: "Explicit Communication and Synchronization in SARC", IEEE Micro, vol. 30, no. 5, pp. 30-41, Sep./Oct. 2010,

[C38] G. Passas, M. Katevenis, D. Pnevmatikatos: "VLSI Micro-Architectures for High-Radix Crossbar Schedulers", Proceedings, 5th ACM/IEEE Int. Symp. on Networks-on-Chip (NOCS 2011), 1-4 May 2011.

Conference Poster Publications (accepted after Full Paper Review):

[P1] George Kornaros, Ioannis Papaefstathiou, Dionisios Pnevmatikatos, "Dynamic Software-Assisted Monitoring of On-Chip Interconnects", In Proceedings, Workshop on Diagnostic Services in Network-on-Chips, IEEE Design Automation & Test in Europe 2007, Nice, France, April 16-20, 2007, 2-page Full paper.

[P2] Panagiotis Afratis, Eyripides Sotiriades, Grigorios Chrysos, Sotiria Fytraki, Dionisios Pnevmatikatos, "A Rate-based Prefiltering Approach to BLAST Acceleration", In Proceedings, International Conference on Field Programmable Logic and Applications (FPL), September 8-10, 2008, Full 6-page, Poster Presentation.

[P3] Dimitris Theodoropoulos, Ioannis Papaefstathiou and Dionisios Pnevmatikatos, "Cproc: An efficient Cryptographic Coprocessor", In Proceedings, 16th IFIP/IEEE International Conference on Very Large Scale

Integration (VLSI-SoC), October 13-15, 2008, 4-page paper, Poster Presentation.

[P4] Dimitris Theodoropoulos, Alexandros Siskos, Dionisios Pnevmatikatos, "CCproc: A custom VLIW cryptography co-processor for symmetric-key Ciphers", 5th International Workshop on Applied Reconfigurable Computing (ARC) 2009, Full 6-page paper, Poster Presentation.