Nikolaos Ntarmos, PhD

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Education

2008	*PhD*	*Computer Engineering & Informatics Dept., University of Patras, Greece*

Thesis title: "Development and Utilization of Novel Systems for Auditing, Accounting, and Estimating of Global Parameters and Characteristics of the Entities in Peer-to-Peer Networks".

2004	*MSc*	*Computer Engineering & Informatics Dept., University of Patras, Greece*

Thesis title: "Behavior Auditing and Accounting System for Peer-to-Peer Networks".

2002	*Diploma*	*Electronic & Computer Engineering Dept., Technical University of Crete, Greece*

Thesis title: "An Internet Content Integration System: Mediator and Wrappers".

Employment

2013 - Today *University of Glasgow* *Lord Kelvin Adam Smith Fellow*

Appointed Lord Kelvin Adam Smith Fellow to the School of Computing Science, University of Glasgow. Currently conducting research focusing on Big Data themes, including consistency guarantees for multi-datacenter systems, distributed shared-nothing data management architectures, modelling of query processing costs in distributed NoSQL data stores, and high performance data management in the Cloud.

2012 - Today *Cloud9 project* *Postdoc Researcher*

Participation in the Cloud9 project on multi-datacenter/internet-scale cloud computing infrastructures and data management systems.

2012 - Today *EICOS project* *Postdoc Researcher*

Participation in the EICOS project on personalized cooperative information ecosystems.

2010 - 2013 *LAWA project* *Postdoc Researcher*

Participation in the Longitudinal Analytics of Web Archive data (LAWA) project – FP7-258105/ICT-2009.1.6 (http://www.lawa-project.eu/), on data and resource management in Internet-scale cloud computing infrastructures.

2002 - Today *Network-Centric Information Systems Lab, University of Patras, Greece* *Systems Administrator*

Design, configuration, integration, and maintenance of the main production server and the workstations of the Network-Centric Information Systems (NetCInS) lab, Computer Engineering and Informatics Dept., University of Patras, Greece (http://netcins.ceid.upatras.gr/).

2009 - 2011 *Computer Science Dept., University of Ioannina, Greece* *Adjunct Assistant Prof.*

Courses taught: "Network Programming", "Algorithm Design and Analysis (Lab)", "Computer Networks (Lab)", "Programming in C (Lab)".

2008 - 2010 *Network-Centric Information Systems Lab, University of Patras, Greece* *Postdoc Researcher*

Actively pursuing research themes in the general subject areas of widely distributed systems and cloud computing.

2008 *Informatics Research Corps, Greek Army* *Field Engineer*

Configuration, maintenance, and field deployment of computing and telecommunication hardware and software systems used by the Greek Army.

2007 *V.Trip Group, Athens, Greece*   *Systems Administrator*

Design, configuration, and integration of the network backbone and main production servers of the V.Trip group of companies.

2005 - 2007 *ITEI.Gr, Rethimno, Greece*   *Systems Administrator*

Design, configuration, integration, and maintenance of the main production servers and site-wide network infrastructure of web hosting firm ITEI.Gr.

2002 - 2007 *Computer Engineering and Informatics Dept.,*   *Teaching Assistant*
University of Patras, Greece

Courses taught: "Operating Systems", "Internet Content Distribution Systems", "Advanced Subjects in Distributed Systems".

2006 *V.Trip Group, Athens, Greece*   *Software Engineer*

Participation in the design of the passport issuing system currently in use by the Hellenic Republic.

2005 *Inno-Utilities project*   *Software Engineer*

Participation in the Innovation-friendly Public Procurement and Fight against Telecommunications Fraud and Security Threats (Inno-Utilities) project – IPS-2001-42014 (`http://www.inno-utilities.org/`), in collaboration with OTE, Deutsche Telekom, Portugal Telecom, and EURESCOM.

2004 *DELIS project*   *Research Engineer*

Participation in the Dynamically Evolving, Large-scale Information Systems (DELIS) project – IST-2002-001907 (`http://delis.upb.de/`).

2002 - 2003 *DBGlobe project*   *Research Engineer*

Participation in the Data-centric approach to Global Computing (DBGlobe)project – IST-2001-32645 (`http://softsys.cs.uoi.gr/dbglobe/`).

2002 - 2003 *DIET project*   *Research Engineer*

Participation in the Decentralized Information Ecosystem Technologies (DIET) project – IST-1999-10088 (`http://cordis.europa.eu/fetch?ACTION=D&CALLER=PROJ_IST&RCN=57122`).

2001 - 2003 *InternetServices.Gr, Chania, Greece*   *Systems Administrator*

Design, configuration, and integration of the main production server of the web hosting firm InternetServices.Gr.

2002 *CRESCCO project*   *Research Engineer*

Participation in the Critical Resource Sharing for Cooperation in Complex Systems (CRESCCO) project – IST-2001-33135 (`http://www.ceid.upatras.gr/crescco/`).

2002 *FLAGS project*   *Research Engineer*

Participation in the Foundational Aspects of Global Computing Systems (FLAGS) project – IST-2001-33116 (`http://ru1.cti.gr/flags/`).

2001 - 2002 *Electronic and Computer Engineering Dept.,*   *Teaching Assistant*
Technical University of Crete, Greece

Courses assisted: "Operating Systems", "Distributed Information & Knowledge Systems and Applications".

1999 - 2002	*Software and Network Applications Lab,*	*Systems Administrator*
	Technical University of Crete, Greece	

Design, configuration, integration, and maintenance of the main production servers, network backbone, and workstations of the Software and Network Applications Lab, including the installation and configuration of the first computing cluster of the Technical University of Crete.

1999 - 2002	*Technical University of Crete, Greece*	*Software Engineer*

Participation in the research, design, development, and deployment team of the internet information integration system "Coins-n-Dice".

1998 - 1999	*Technical University of Crete, Greece*	*Web author - Web master*

Design and implementation of the central web site of the Technical University of Crete, Greece.

1996 - 1999	*Information Systems Center,*	*Systems Administrator*
	Technical University of Crete, Greece	

Design, configuration, integration, and maintenance of the main production servers, network backbone, and workstations of the Information Systems Center.

Software Systems

- Security and bug-fix contributions to the kernels, base systems, and applications of most open-source operating systems (Linux, FreeBSD, NetBSD, OpenBSD).
- Package maintainer for the FreeBSD operating system.
  [http://www.freshports.org/search.php?stype=maintainer&query=ntarmos]
- InFeRno.
  [https://bitbucket.org/ntarmos/inferno/]
- eXO.
  [http://netcins.ceid.upatras.gr/software/eXO.php]
  [http://github.com/ntarmos/eXO/]
- FreeSHADE.
  [http://netcins.ceid.upatras.gr/software/SHADE.php]
- FreeDHS.
  [http://netcins.ceid.upatras.gr/software/DHS.php]
- Coins-n-Dice.
  [http://netcins.ceid.upatras.gr/diceandcoins.php]
- Contributor to several open source projects (e.g., *awesome* window manager, *conky* system monitor, Google: Ntarmos).

Research Interests

- Data and resource management in Internet-scale cloud computing infrastructures.
- Statistics maintenance and complex/aggregate query processing and optimization in Internet-scale data management systems.
- Security, anonymity, trust/reputation, monitoring/auditing/accounting, load balancing, and routing issues in Internet-scale distributed systems.
- Internet system performance measurements.
- Integration of peer-to-peer and embedded systems.

Awards and Grants

- Greek Ministry of Education, ΘΑΛΗΣ programme, Cloud9 project (grant; 2012-2015).
- Greek Ministry of Education, ΘΑΛΗΣ programme, EICOS project (grant; 2012-2015).
- CIKM'06 (best interdisciplinary paper award).
- Greek Ministry of Development, General Secretariat of Research and Technology, PENED'03 programme (grant; 2004-2007).
- S. Onassis Foundation, "The 2003 Lectures in Computer Science: Internet and Web: Crawling the Algorithmic Foundations" (grant; 2003).
- A. Matalas Foundation (grant; 1996-2003).
- National Bank of Greece (award; 1996, 2002, 2004).
- OTE (award; 1996, 2002, 2004).
- Karyai Benevolent Foundation (award; 1997, 1998).

P.C. Member

Reviewer

Conferences and Workshops:

- ATC, ACM DEBS, ACM CIKM, ACM/IFIP/USENIX Middleware, DBISP2P, DISC, EDBT, HDMS, ICDCS, IEEE ICDE, IEEE IPDPS, IEEE P2P, PCI, SSDBM, VLDB.

Journals:

- ACM TOCS, ACM TOIT, ACM TWEB, Elsevier DKE, Elsevier JNCA, IEEE TPDS, LNCS TCS, Springer P2PNA, Springer WWWJ.

Publications

Book Chapters:

- I. Aekaterinidis, N. Ntarmos, T. Pitoura, and P. Triantafillou, "Towards Efficient Complex Data Management Services in Peer-to-Peer Networks." R. Baldoni, G. Cortese, and F. Davide, editors, *Global Data Management*, vol 8, *Emerging Communication: Studies in New Technologies and Practices in Communication* series, IOS Press, July 2006.

Journals:

- S. Karavarsamis, N. Ntarmos, K. Blekas, and I. Pitas, "Detecting Pornographic Images by Localizing Skin ROIs." *International Journal of Digital Crime and Forensics (IJDCF)*, 5(1), September 2013.
- T. Pitoura, N. Ntarmos, and P. Triantafillou, "Saturn: Range Queries, Load Balancing, and Fault Tolerance in DHT Data Systems." *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 24(7), July 2012 (accepted: 2010).
- N. Ntarmos, P. Triantafillou, and G. Weikum, "Statistical Structures for Internet-Scale Data Management." *VLDB Journal (VLDBJ)*, 18(6), December 2009.
- N. Ntarmos, P. Triantafillou, and G. Weikum, "Distributed Hash Sketches: Scalable, Efficient, and Accurate Cardinality Estimation for Distributed Multisets." *ACM Transactions on Computer Systems (TOCS)*, 27(1), February 2009.
- P. Triantafillou, N. Ntarmos, and J. Yannakopoulos, "D.I.C.E.: A Cache Engine for e-Content Integration." *IEEE Internet Computing (IC)*, 8(2), March/April 2004.

Conference Proceedings:

- G. Sfakianakis, I. Patlakas, N. Ntarmos, and P. Triantafillou, "Interval Indexing and Querying on Key-Value Cloud Stores." *Proceedings of the 29th IEEE International Conference on Data Engineering (ICDE), 2013 (to appear)*.
- S. Karavarsamis, I. Pitas, and N. Ntarmos, "Recognizing Pornographic Images." *Proceedings of the 14th ACM Workshop on Multimedia and Security (MMSec)*, September 2012.
- G. Koloniari, N. Ntarmos, E. Pitoura, and D. Souravlias, "One is Enough: Distributed Filtering for Duplicate-Free Event Delivery." *Proceedings of the 20th ACM Conference on Information and Knowledge Management (CIKM)*, October 2011.
- S. Karavarsamis, N. Ntarmos, and K. Blekas, "InFeRno: An Intelligent Framework for Recognizing Pornographic Web Pages." *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) – demo paper*, September 2011.
- C. Kaidos, A. Pasiopoulos, N. Ntarmos, and P. Triantafillou, "Design and Implementation of the Social Network File System." *Proceedings of the 4th Workshop on Social Network Systems (SNS)*, April 2011.
- A. Loupasakis, N. Ntarmos, and P. Triantafillou, "eXO: Decentralize Autonomous Scalable Social Networking." *Proceedings of the 5th ACM SIGMOD/VLDB Conference on Innovative Data Systems Research (CIDR)*, January 2011.
- G. Weikum, N. Ntarmos, M. Spaniol, P. Triantafillou, A. Benczùr, S. Kirkpatrick, J. Masanés, and M. Williamson, "Longitudinal Analytics on Web Archive Data: It's About Time!" *Proceedings of the 5th ACM SIGMOD/VLDB Conference on Innovative Data Systems Research (CIDR)*, January 2011.
- M. Bender, S. Michel, N. Ntarmos, P. Triantafillou, G. Weikum, and C. Zimmer, "Discovering and Exploiting Keyword and Attribute-Value Co-occurrences to Improve P2P Routing Indices." *Proceedings of the 15th ACM Conference on Information and Knowledge Management (CIKM)*, November 2006. (**Best Interdisciplinary Paper Award**)
- N. Ntarmos, P. Triantafillou, and G. Weikum, "Counting at large: Efficient cardinality estimation in Internet-scale data networks." *Proceedings of the 22nd International Conference on Data Engineering (ICDE)*, April 2006.
- T. Pitoura, N. Ntarmos, and P. Triantafillou, "Replication, Load Balancing, and Efficient Range Query processing in DHT Data Networks." *Proceedings of the 10th International Conference on Extending Database Technology (EDBT)*, March 2006.

- N. Ntarmos, T. Pitoura, and P. Triantafillou, "Range query optimization leveraging peer heterogeneity in DHT data networks." *Proceedings of the 3rd International Workshop on Databases, Information Systems, and Peer-to-Peer Computing (DBISP2P)*, August 2005.
- N. Ntarmos and P. Triantafillou, "AESOP: Altruism-Endowed Self-Organizing Peers." *Proceedings of the 2nd International Workshop on Databases, Information Systems, and Peer-to-Peer Computing (DBISP2P)*, August 2004.
- N. Ntarmos and P. Triantafillou, "SeAl: Managing Accesses and Data in Peer-to-Peer Sharing Networks." *Proceedings of the 4th IEEE International Conference on Peer-to-Peer Computing (P2P)*, August 2004.
- P. Triantafillou, N. Ntarmos, and J. Yannakopoulos, "D.I.C.E. and Co.In.S.: A Data Integration Cache Engine for a Content Integration System." *Proceedings of the 4th IEEE International Conference on Web Information Systems Engineering (WISE) – short paper*, December 2003.
- P. Triantafillou, N. Ntarmos, and J. Yannakopoulos, "The HyperHotel Application Built over D.I.C.E. and Co.In.S." *Proceedings of the 4th IEEE International Conference on Web Information Systems Engineering (WISE) – demo paper*, December 2003.
- P. Triantafillou, N. Ntarmos, S. Nikoletseas, and P. Spirakis, "Nanopeer Networks and Peer-to-Peer Worlds." *Proceedings of the 3rd IEEE International Conference on Peer-to-Peer Computing (P2P)*, September 2003.
- P. Triantafillou, C. Xiruhaki, M. Koubarakis, and N. Ntarmos, "Towards High Performance Peer-to-Peer Content and Resource Sharing Systems." *Proceedings of the 1st ACM SIGMOD/VLDB Conference on Innovative Data Systems Research (CIDR)*, January 2003.

Theses:
- N. Ntarmos, "Development and Utilization of Novel Systems for Auditing, Accounting, and Estimating of Global Parameters and Characteristics of the Entities in a Peer-to-Peer Networks" *PhD Thesis, Computer Engineering and Informatics Dept., University of Patras, Greece*, February 2008.
- N. Ntarmos, "A behavior monitoring and auditing system for peer-to-peer networks." *MSc Thesis, Computer Engineering and Informatics Dept., University of Patras, Greece*, May 2004.
- N. Ntarmos, "An Internet Content Integration System – The Mediator and Wrappers." *Diploma Thesis, Electronic and Computer Engineering Dept., Technical University of Crete, Greece*, April 2002.

Technical Reports:
- G. Sfakianakis, I. Patlakas, N. Ntarmos, and P. Triantafillou. "Interval Indexing and Querying on Key-Value Cloud Stores." Technical Report WP3-7-21.09.2012, Longitudinal Analytics of Web Archive Data Project (LAWA), September 2012.
- N. Ntarmos, I. Patlakas, G. Sfakianakis, and P. Triantafillou, "Rank Join Queries in Cloud Stores." Technical Report WP3-6-21.09.2012, Longitudinal Analytics of Web Archive Data Project (LAWA), September 2012.
- A. Altanis, I. Patlakas, N. Ntarmos, and P. Triantafillou, "Joins and Selects on Clouds." Technical Report WP3-3-22.09.2011, Longitudinal Analytics of Web Archive Data Project (LAWA), September 2011.
- G. Sfakianakis, I. Patlakas, N. Ntarmos, and P. Triantafillou, "Interval Queries on the Cloud." Technical Report WP3-2-22.09.2011, Longitudinal Analytics of Web Archive Data Project (LAWA), September 2011.
- N. Ntarmos, I. Patlakas, and P. Triantafillou, "Decentralized Rank Join Queries." Technical Report WP3-1-22.09.2011, Longitudinal Analytics of Web Archive Data Project (LAWA), September 2011.
- N. Ntarmos and P. Triantafillou, "Statistical Structures for Internet-Scale Query Optimization." TR 2006/06/01, R.A. Computer Technology Institute, June 2006.
- N. Ntarmos and P. Triantafillou, "sizeof() in P2P Networks: Hash Sketches over DHTs." TR 2004/12/06, R.A. Computer Technology Institute, December 2004.
- T. Pitoura, N. Ntarmos, and P. Triantafillou, "HotRoD: Load Balancing and Efficient Range Query Processing in Peer-to-Peer Data Networks." TR 2004/12/05, R.A. Computer Technology Institute, December 2004.
- N. Ntarmos, T. Pitoura, and P. Triantafillou, "The RangeGuard: Range Query Optimization in Peer-to-Peer Data Networks." TR 2004/12/04, R.A. Computer Technology Institute, December 2004.

Conferences With Informal Proceedings:
- N. Ntarmos and G. Weikum, "Distributed Hash Sketches: Estimating the Cardinality of Large Multisets in Internet-Scale Data Networks." *Proceedings of the 5th Hellenic Data Management Symposium (HDMS)*, September 2006.
- T. Pitoura, N. Ntarmos, and P. Triantafillou, "Replication, Load Balancing, and Efficient Range Query processing in DHTs." *Proceedings of the 4th Hellenic Data Management Symposium (HDMS)*, August 2005.

- N. Ntarmos and P. Triantafillou, "SeAl: Managing Accesses and Data in Peer-to-Peer Sharing Networks." *Proceedings of the 3rd Hellenic Data Management Symposium (HDMS)*, June 2004.
- P. Triantafillou, N. Ntarmos, and T. Pitoura, "The RangeGuard: Range Query Optimization in Peer-to-Peer Data Networks." *Proceedings of the 3rd Hellenic Data Management Symposium (HDMS)*, June 2004.