

CURRICULUM VITAE

of

Dr. Kimon P. Kontovasilis

PERSONAL

Office Address: Institute of Informatics & Telecommunications
N.C.S.R. "Demokritos"
P.O. Box 60228, GR-15310 AG. PARASKEVI ATTIKIS, GREECE

Telephone: +30 210 650 3130

Fax: +30 210 653 2175

Email: kkont@iit.demokritos.gr

STUDIES

1990–1993: National Technical University of Athens, Ph.D. in Electrical Engineering, February 1993.

1988–1990: North Carolina State University, M.Sc. in Computer Science, May 1990.

1982–1987: National Technical University of Athens, Diploma in Electrical Engineering (5yr program of study).

WORK EXPERIENCE

Dec 2007–to date: Research Director, Institute of Informatics & Telecommunications, NCSR "Demokritos". Since 2001, Head of Networks Laboratory.

Sep 1999–Dec 2007: Senior Researcher, Institute of Informatics & Telecommunications, NCSR "Demokritos". Since 2001, Head of Networks Laboratory.

Jan 1996–Sep 1999: Researcher, Institute of Informatics & Telecommunications, NCSR "Demokritos".

Dec 1994–Dec 1995,
Aug 1990–Feb 1993: Research Associate, Digital Telecommunications Laboratory, National Technical University of Athens

Mar 1993–Dec 1994: Military service, as scientific officer at the Computing Center of the Greek Air Force.

Aug 1990–Jan 1992: Technical Consultant in the areas of computing and information systems for ETAKEI s.a., a company specializing in textile technology.

Aug 1988–May 1990: Teaching/research assistant at the Computer Science Dept., North Carolina State University.

RESEARCH INTERESTS

Modeling, performance evaluation, traffic control and resource management of wired and wireless telecommunication networks, the management of heterogeneous jointly operated wireless networks, distributed architectures for network management systems, ad hoc, sensor and delay-tolerant networks, queueing theory, as well as numerical methods for the solution of Markov Chain models and numerical linear algebra.

INVOLVEMENT IN EXTERNALLY FUNDED RESEARCH PROJECTS

- Project RACE 1022, in the RACE European Community Research Program (as investigator and member of the Ad Hoc Advisory Group on traffic models).
- Project EXPLOIT, in the RACE II European Community Research Program (as investigator).
- Project FLASH-TV, in the RACE II European Community Research Program (as investigator).
- Project WATT, in the ACTS European Union Research Program (as technical representative for NCSR “Demokritos”, leader of Work Package 1.1, member of the project management committee).
- Project CRABS, in the ACTS European Union Research Program (as investigator).
- Project “Graduate study programs of Greek Universities in Quantitative Disciplines: A study of their Interaction with the Greek Industry”, in the ΕΠΕΑΕΚ program of the Greek General Secretariat for Research and Technology (GSRT) (as investigator).
- Project “Design and development of a Network of Teleconference Centers for the support of Tele-learning and Tele-work Environments and Development of an Intelligent Tele-learning platform”, in the ΕΠΙΕΤ II program of GSRT (as investigator).
- Project 99ΕΔ92-“Resource Management and Traffic Control in Large Broadband Networks under QoS Constraints”, in the ΠΙΕΝΕΔ program of GSRT (as project coordinator).
- Project CREDO, in the IST-FP5 European Union Research Program (as technical manager and leader of Work Package 6).
- Project UNITE, in the IST-FP6 European Union Research Program (as technical representative for NCSR “Demokritos”).
- Project ATHENA, in the IST European Union Research Program (as investigator)
- Project IMOSAN, in the IST European Union Research Program (as investigator)
- Project ENTHRONE II, in the IST European Union Research Program (as investigator)
- Project LIAISON, in the IST European Union Research Program (as investigator)
- Project EMERGE, in the IST European Union Research Program (as investigator)

- Project HURRICANE, in the ICT-FP7 European Union Research Program (as lead representative of the coordinating partner NCSR “Demokritos”)
- Project ADAMANTIUM, in the ICT-FP7 European Union Research Program (as investigator)
- Project ALICANTE, in the ICT-FP7 European Union Research Program (as investigator)

In addition to the above, there are several internal follow-up projects to exploit results from the above.

Collectively, have attracted over 2.2M€ of research funds over the last 10 years.

TEACHING EXPERIENCE

- Participation in the teaching of undergraduate courses on numerical analysis, numerical solution of Markov Chain models and programming languages (while at NCSU).
- Design, authoring of lecture notes and teaching of the graduate course “Resource management and traffic control in multi-service broadband networks”, offered as part of the Ph.D. study program at the ECE Dept. of the National Technical University of Athens (in peer association with faculty member), over the period 1998–2003.
- Academic advisor for:
 - 9 diploma theses
 - 5 Ph.D. theses (three granted, two ongoing, in association with Greek Universities)
- Yearly lecturing at the Summer School of NCSR “Demokritos”, from 1996 onwards.

PUBLICATIONS

I. ARTICLES PUBLISHED IN REFEREED JOURNALS

- K. P. Kontovasilis, R. J. Plemmons, and W. J. Stewart. "Block-cyclic SOR for Markov Chains with P-cyclic infinitesimal generator". *Linear Algebra Appl.*, 154–156:145–223, 1991.
- K. P. Kontovasilis and N. M. Mitrou. "Bursty traffic modeling and efficient analysis algorithms via fluid-flow models for ATM-IBCN". *Annals of Operations Research*, 49:279–323, 1994. Special Issue in Methodologies for High Speed Networks.
- N. M. Mitrou, K. P. Kontovasilis, H. Kroener, and V. B. Iversen. "Statistical multiplexing, bandwidth allocation strategies and connection admission control in ATM networks". *European Transactions on Telecommunications*, 5(2):33–47, 1994.

- J. Cosmas, G. Petit, R. Lehnert, C. Blondia, K. Kontovasilis, O. Casals, and T. Theimer. "A review of voice, data and video traffic models for ATM". *European Transactions on Telecommunications*, 5(2):11–26, 1994.
- K. P. Kontovasilis, J. T. Tsiligaridis, and G. I. Stassinopoulos. "Buffer dimensioning for delay- and loss-sensitive traffic". *Computer Communications*, 18(5):315–328, 1995.
- K. P. Kontovasilis and N. M. Mitrou. "Markov modulated traffic with near complete decomposability characteristics and associated fluid queueing models". *Adv. Appl. Prob.*, 27(4):1144–1185, 1995.
- N. M. Mitrou, S. Vamvakos, and K. P. Kontovasilis. "Modelling, parameter assessment and multiplexing analysis of bursty sources with hyperexponentially distributed bursts". *Computer Networks and ISDN Systems*, 27(7):1175–92, 1995.
- N. Mitrou, K. Kontovasilis and E. Protonotarios. "ATM Traffic Engineering for ABR Service Provisioning". *Telecommunication Systems*, 5:135–157, 1996.
- N. Mitrou, K. Kontovasilis, N. Lykourpoylos and V. Nellas. "Experimental Validation of Selected Results on ATM Statistical Multiplexing in the EXPLOIT Project". *European Transactions on Telecommunications*, 7(5):423–431, 1996.
- N. Mitrou, and K. Kontovasilis. "Comparison of Three Control Laws for Statistical Multiplexing in ATM". *Journal on Communications*, vol. XLVII, pp. 24–29, 1996.
- K. Kontovasilis and N. Mitrou. "Effective Bandwidths for a Class of Non Markovian Fluid Sources". *ACM Computer Communications Review*, 27(4):263–274, 1997.
- G. Kormentzas, E. Pallis, A. Kourtis and K. Kontovasilis. "A Broadband Wireless Access System for Wired and Wireless LANs". *Journal of Communications and Networks*, 2(3):259–265, 2000.
- K. Kontovasilis, G. Kormentzas, N. Mitrou, J. Soldatos and E. Vayias. "A framework for designing ATM management systems by way of abstract information models and distributed object architectures". *Computer Communications*, 24(7–8):641–653, 2001.
- G. Kormentzas and K. Kontovasilis. "An Open Architecture for Transparently Embedding Advanced Traffic Control Functionality in ATM Switches". *Journal of Communications and Networks*, 3(1):64–77, 2001. Special Issue on "Programmable Switches and Routers".
- C. Skianis, K. Kontovasilis, A. Drigas, and M. Moatsos, "Measurement and Statistical Analysis of Asymmetric Multipoint Videoconference Traffic in IP Networks", *Telecommunications Systems*, 23:1-2, pp. 95-122, 2003.
- K. Kontovasilis, G. Kormentzas, A. Kourtis, N. Mitrou, J. Soldatos and E. Vayias. "A Web-based Database System for Providing Technical Information on ATM Networking Platforms", *Journal of Computing and Information Technology*, 11:1, pp1–13, 2003.

- D. Loukatos, L. Sarakis, K. Kontovasilis, N. Mitrou, “An Efficient ATM Traffic Generator for the Real-Time Production of a Large Class of Complex Traffic Profiles”, *Journal of Communications and Networks*, 7(1):54–64, 2005.
- D., Kouis, D., Loukatos, K., Kontovasilis, G., Kormentzas, C., Skianis, “On the Effectiveness of DVB-T for the Support of IP-based Services in Heterogeneous Wireless Networks”, *Computer Networks*, 48(1):57–73, Special Issue on ‘Internet over Digital Broadcast Video Networks’, M.J. Montpetit, G. Fairhurst (Eds.), 2005.
- C. Skianis, G. Kormentzas, K. Kontovasilis, “Interactions between intelligent multimodal terminals and a network management system in a B3G context”, *Wiley Wireless Communications and Mobile Computing Journal*, 5:679–695, Special Issue on WLAN/3G Integration for Next-Generation Heterogeneous Mobile Data Networks, 2005.
- C. Skianis, G. Kormentzas, K. Kontovasilis, G. Lisa, “Efficiency Study of the Information Flow Mechanism Enabling Interworking of Heterogeneous Wireless Systems”, *The Journal of Systems and Software*, Elsevier Science, 80(10):1746–1753, 2007.

II. REFEREED ARTICLES PUBLISHED IN EDITED BOOKS

- K. P. Kontovasilis and N. M. Mitrou. "Stochastic fluid models for a buffer loaded by markov modulated traffic with near complete decomposability characteristics". In *IFIP Transactions C: High Speed Networks and their Performance*. H. G. Perros and Y. Viniotis eds. Volume C-21, North Holland, 1994.
- N. M. Mitrou, K. P. Kontovasilis, and V. Nellas. "Bursty traffic modelling and multiplexing performance analysis in ATM networks: A three moment approach". In *Performance Modelling and Evaluation of ATM Networks*. D. Kouvatsos, ed. Chapman & Hall, London, 1995.
- N. Mitrou, K. P. Kontovasilis and E. N. Protonotarios. "ATM Traffic Analysis and Control for ABR Service Provisioning". In *IFIP Transactions: Data Communications and their Performance*. S. Fdida and R. Onvural eds. Chapman & Hall, pp. 317–331, 1996.
- G. Kormentzas and K. Kontovasilis. “Software Switch Extensions for the Portable Deployment of Traffic Control Algorithms”. In *Next Generation Networks: Networks and Services for the Information Society*, No. 1938 in Lecture Notes in Computer Science, S. Rao and K. I. Sletta (eds), pp. 264–77, Springer, October 2000.
- K. Kontovasilis, S. Wittevrogel, H. Bruneel, B. van Houdt, C. Blondia, “Performance of telecommunication systems: selected topics”, in *Communication Systems: The State of the Art*, L. Chapin (ed.), Kluwer, 61–93, 2002.
- K. Katzourakis, G. Kormentzas, K. Kontovasilis and C. Efstathiou, “A Virtual Signalling Protocol for Transparently Embedding Advanced Traffic Control and Resource Management Functionality in ATM Core Networks”. In *Lecture Notes in*

Computer Science: Management of Multimedia Networks and Services, ISBN 3-540-20050-9, Springer Verlag, Volume LNCS2839, pp. 259–271, 2003.

III. ARTICLES IN REFEREED CONFERENCE PROCEEDINGS

- K. P. Kontovasilis, R. J. Plemmons, and W. J. Stewart. "P-cyclic SOR with arbitrary $p \geq 2$ for Markov Chains. In *Proc. IMACS*, Brussels, April 2–4, 1991.
- N. M. Mitrou, K. P. Kontovasilis, S. G. Nalpadidou, and E. N. Protonotarios. "Bursty traffic in ATM networks: an engineering approach for CAC and traffic shaping". In *Proc. ATM Network Planning and Evolution*, London, April 16–17, 1991.
- N. M. Mitrou and K. P. Kontovasilis. "Fast analysis of on-off heterogeneous traffic multiplexing with fluid-flow models and its application to ATM". In *2nd RACE Workshop in Traffic and Performance Aspects in IBCN*, Aveiro, Portugal, January 23–24 1992.
- N. M. Mitrou and K. P. Kontovasilis. "An efficient descriptor of the multiplexing attributes of traffic streams". In *4th International Conference on Advances in Communication and Control*, Rhodes Greece, June 14–18, 1993.
- N. M. Mitrou, K. P. Kontovasilis, and V. Nellas. "Bursty traffic modelling and multiplexing performance analysis in ATM networks: A three moment approach". In *2nd IFIP Workshop on Performance Modelling and Evaluation of ATM Networks*, pages 16/1–16/11, U. of Bradford, Bradford, July 4–7, 1994.
- N. Mitrou, K. P. Kontovasilis and E. N. Protonotarios. "ATM Traffic Engineering for ABR Service Provisioning". In *First International `ATM Traffic Expert' Symposium*, Basel, April 21, 1995.
- N. Mitrou and K. P. Kontovasilis. "Connection Admission Control and Adaptive Shaping for the ABR Service". In *BRAVE Workshop on `ATM hot topics on Traffic and Performance: from RACE to ACTS'*, Italtel-Settimo Milanese, Italy, June 14–15, 1995.
- N. Mitrou, K. P. Kontovasilis and E. N. Protonotarios. "A Closed-Form Expression for the Effective Rate of ON/OFF Traffic Streams and its Usage in Basic Traffic Control Problems". In ITC sponsored *International Teletraffic Seminar on `New Telecommunication Services for Developing Networks'*, St. Petersburg, Russia, June 26–July 2, 1995.
- N. Mitrou, M. Potts and K. Kontovasilis. "The WATT System and its Contribution to Broadband Network Interoperability". In *Open Workshop on Broadband Network Deployment and its Impact on Information Society*, Rennes, France, March 25–26, 1997.
- N. Mitrou, M. Potts and K. Kontovasilis. "Remote Monitoring of an ATM platform through the WATT System". In *2nd International Distributed Conference on Network Interoperability*, Madeira, Portugal, June 16–18, 1997.

- N. Mitrou, V. Vayias, J. Soldatos, K. Kavidopoulos, G. Branis, K. Kontovasilis, G. Kormentzas and C. Vadura. "Remote Monitoring of Networks through Gateway Programming over the Internet". In *13th UK Workshop on Performance Engineering of Computers and Telecomms*, Ilkley, W. Yorkshire, UK, July 24, 1997.
- G. Kormentzas, V. Pallis, A. Kourtis and K. Kontovasilis. "A Cellular System for Providing Wireless Services". In *3rd ACTS Mobile Communications Summit*, Rhodes, Greece, June, 1998.
- E. Vayias, J. Soldatos, N. Mitrou, K. Kontovasilis, and G. Kormentzas. "Managing Networks over the Web: Classification of Approaches and an Implementation". In *IEEE Intl. Conf. on Telecommunications (ICT'98)*, Volume IV, pp. 451-456, Chalkidiki, Greece, June, 1998.
- G. Kormentzas, V. Pallis, A. Kourtis and K. Kontovasilis. "A Cellular System for the Provision of Wireless Internet Access and of Multimedia Services in High Data Rate". In *1st Panhellenic Conference on New Information Technology*, Athens, Greece, October, 1998. (In Greek.)
- J. Soldatos, E. Vayias, N. Mitrou, G. Kormentzas, and K. Kontovasilis. "ATM Management: Challenges and Solutions for the Heterogeneous Environment". In *IEEE/IFIP Intl. Conf. on Management of Multimedia Networks and Services (MMNS'98)*, Versailles, France, November, 1998.
- K. Kontovasilis and N. Mitrou. "Equivalent Flow Rate Theory for Semi-Markovian Flow Processes". In *2nd Intl. Symposium on Semi-Markov Models: Theory and Applications*, Compiègne, France, Dec. 7–9, 1998.
- G. Kormentzas, K. Kontovasilis, A. Kourtis, J. Soldatos, E. Vayias and N. Mitrou. "Managing Heterogeneous Cellular Wireless Systems Using Abstract Information Models". In *4th ACTS Mobile Communications Summit*, Sorrento, Italy, June 8–11, 1999.
- G. Kormentzas, K. Kontovasilis, A. Kourtis, J. Soldatos, E. Vayias and N. Mitrou. "A Web-based Management System Architecture for Heterogeneous Cellular Wireless Platforms". In *4th ACTS Mobile Communications Summit*, Sorrento, Italy, June 8–11, 1999.
- K. Kontovasilis, G. Kormentzas, A. Kourtis, N. Mitrou, J. Soldatos and E. Vayias. "A Web-based System for Providing Information about Prototype ATM Platforms, Associated Research Projects and Related Trials". In *21st Intl. Conf. on Information Technology Interfaces*, Pula, Croatia, June 15–18, 1999.
- G. Kormentzas, J. Soldatos, E. Vayias, K. Kontovasilis and N. Mitrou. "An ATM Switch-Independent MIB for Portable Deployment of Traffic Control Algorithms". In *7th Intl. Conf. on Advances in Communications and Control*, Athens, Greece, June 27 to July 2, 1999.
- J. Soldatos, G. Kormentzas, E. Vayias, K. Kontovasilis and N. Mitrou. "An Intelligent Agents-based Prototype of an Open Platform Supporting Portable Deployment of Traffic Control Algorithms in ATM Networks". In *7th Intl. Conf. on Advances in Communications and Control*, Athens, Greece, June 27 to July 2, 1999.

- D. Loukatos, L. Sarakis, P. Stathopoulos, K. Kontovasilis and N. Mitrou. “Efficient real-time generation of a large class of bursty traffic streams”, In *IASTED Intl. Conf. on Advances in Communication (AIC2001)*, July 3–6, 2001, Rhodes, Greece.
- P. Demestichas, K. Kontovasilis, S. Buljore, R. Menolascino, O. Negru, I. Zacharopoulos, V. Demesticha, “Validation of the Composite Radio Environment Concept by means of Experiments”, in Proc. *IST Mobile & Wireless Telecommunications Summit 2002*, pp235–239, June 2002.
- G., Kormentzas, C., Skianis, K., Kontovasilis, “A Framework for the Design of Experiments for the Validation of the Composite Radio Concept”, Proceedings of the *1st International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs’03)*, D. Kouvatsos (ed.), Ilkley, pp. 53/1–6, 2003.
- K., Kontovasilis, C., Skianis, G., Kormentzas, “Estimating Signalling Efficiency in a Composite Radio Environment”, Proceedings of the *1st International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs’03)*, D. Kouvatsos (ed.), Ilkley, pp. 65/1–12, 2003.
- D. Loukatos, L. Sarakis, K. Kontovasilis, N. Mitrou, “Efficient Real-Time Traffic Analysis Tools for Monitoring Performance on Packet Networks”, Proceedings of the *1st International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs’03)*, D. Kouvatsos (ed.), Ilkley, pp. 52/1–11, 2003.
- P. Stathopoulos, V. Tountopoulos, D. Kouis, P. Demestichas, K. Kontovasilis, N. Mitrou, “QoS Challenges in Beyond 3G Heterogeneous Networks and a Service Based Approach”, Proceedings of the *1st International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs’03)*, D. Kouvatsos (ed.), Ilkley, pp. 70/1–10, 2003.
- C., Skianis, K., Kontovasilis, G., Kormentzas, G. Lisa, “Simulation Study of a Signalling Protocol Efficiency in a Composite Radio Environment”, Proceedings of the *2004 High Performance Computing & Simulation (HPC&S) Conference*, held in combination with the *18th EUROPEAN SIMULATION MULTICONFERENCE (ESM 2004)* Magdeburg 13-16 June, Germany, pp. 17-22, 2004.
- L., Sarakis, K., Kontovasilis, C., Skianis, E., Kafetzakis, “A Simple Model for the Traffic Profile of TCP Streams in Heterogeneous Networks”, Proceedings of the *2nd International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs’04)*, D. Kouvatsos (ed.), Ilkley 26-28 July, UK, pp. 86/1-86/10, 2004.
- K. Katzourakis, G. Kormentzas, K. Kontovasilis, C. Efstathiou, “An Open Distributed Software System for Providing Traffic Control and Resource Management Functionality in Heterogeneous ATM Core Networks”, pp. 63-71, in Proc. INC2005, Samos, Greece, July 2005.
- Δ31. D. Loukatos, L. Sarakis, K. Kontovasilis, C. Skianis, G. Kormentzas, “Tools and practices for measurement-based network performance evaluation”, Proc.

Computer Aided Modeling and Design of Communication Links and Networks (CAMAD '07), held in conjunction with the *18th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'07)*, Athens, Greece, Sep. 3–7, 2007.

- E. Kafetzakis, K. Kontovasilis, and L. Sarakis, “A distributed simulator coordination platform and its application for integrating an IEEE 802.11 effective capacity-based admission control algorithm”, Proc. *2nd International Conference on Simulation Tools and Techniques (Simutools 2009)*, Rome, Italy, March 02 – 06, 2009.
- I. Manolopoulos, K. Kontovasilis, I. Stavrakakis, and S.C.A. Thomopoulos, “MAD: A Dynamically Adjustable Hybrid Location and Motion-based Routing Protocol for VANETs”, Proc. *7th International Symposium on Wireless Communication Systems (ISWCS 2010)*, York, UK, September 19-22, 2010.

IV. BOOKS (AUTHORED OR EDITED)

- N. Mitrou, K. Kontovasilis, G.N. Rouskas, I. Iliadis, L. Merakos (eds.), *Networking 2004: Networking Technologies, Services, and Protocols; Performance of Computer and Communication Networks; Mobile and Wireless Communications*, Lecture Notes in Computer Science, vol. LNCS 3042, Springer, 2004.

V. TUTORIALS

- M. Fratti, K. Kontovasilis, “Radio Resource Management in Heterogeneous Radio Systems: An Approach from the FP5 CREDO Project”, in book of tutorials of the 2nd International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs'04), Ilkley 26-28 July, UK, D. Kouvatsos (ed.), ISBN 0-9540151-7-7, pp. 86/1-86/10, 2004.

PARTICIPATION IN PROFESSIONAL AND LEARNED SOCIETIES

- Reviewer for papers submitted to international scientific journals:
 - *IEEE/ACM Transactions on Networking*
 - *IEEE Network*
 - *Journal on Communications and Networks*
 - *Telecommunication Systems*
 - *Queueing Systems*
 - *IEE Proceedings*
 - *Wireless Personal Communications*
 - *European Transactions on Telecommunications*

- Reviewer for papers submitted to international conferences:
 - IFIP Networking 2000
 - Net-Con 2002,
 - Infocom 2003, 2004, 2010, 2011
 - NGI 2005
 - ICC 2006
- Technical Program Committee member in:
 - International Working Conference on Performance Modeling and Evaluation of Heterogeneous Networks (HET-NET) 2003, 2004, 2005, 2006
 - 16th ITC Specialist Seminar 2004
 - IFIP-TC6 Networking 2005, 2006, 2007, 2008, 2010, 2011
 - ICDT 2006, 2007, 2008, 2009
 - Globecom 2006 (WCS)
 - PIMRC/CAMAD 2007, 2008, 2009, 2010
 - CNCC 2011
- Technical Program Committee Chair of IFIP-TC6 Networking 2004
- Organizer of international workshop *Terminal and Network Management in Composite Radio Systems*, Nov 19, 2003
- Project proposal and/or project progress evaluator for the Greek Secretariat of Research and Technology
- Member of IFIP, Technical Committee 6, Working Group 6.3
- Member of the Technical Chamber of Greece (certified engineer)