

# Ioannis C. Demetriou (Ιωάννης Κ. Δημητρίου)

Curriculum Vita, January 2014

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## Work address:

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## 1. Profile

Secondary Education in Zossimaea Experimental Public School (town of Ioannina, Greece); B.Sc. in Pure Mathematics, University of Ioannina (1979); M.Phil. Computer Science, University of Technology at Loughborough (1981); Ph.D. Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge (1985). Professor of Mathematics and Informatics, Chairman (since 2009) of Department of Economics at National and Kapodistrian University of Athens (member of the University since July 1992), where, besides his educational and research duties, he contributes managerially and organizationally in several levels. He has been the managing director of the Computing Lab of School of Law, Economics and Political Sciences (1995-2009), associate director (1996-2008) and director (2008-2010) of the MSc course on Applied Economics and Finance, Director of the Division of Mathematics and Informatics (2000-2009) and Department Vice Chairman (2007-09); University Senator (since 2009).



He has taught at the undergraduate level: differential and integral calculus, differential equations, linear algebra, computer science, computer programming. At the postgraduate and PhD level: optimization theory, advanced mathematical programming, management science/operations research, financial derivatives, quantitative methods (MBA program). As an invited professor (1990-1996) he has taught computer graphics and human computer interaction at the Department of Informatics, Athens U. of Economics. He has also taught mathematics at the Division of Physical Chemistry, U. of Ioannina (spring semester 1987) and numerical analysis at the Hellenic Air Force Academy (1989-90, fall semester). Visiting scholar at the U. of Cambridge (summers 1989, 1996). Adjunct Professor at the Lavern University California (Athens Campus, 1995-97) for management science, computer graphics and management information systems.

He develops theory and algorithms for numerical approximation and optimization calculations accompanied by software development for general use. His research focuses especially on data smoothing by divided differences and its applications to science, engineering and economics. He has developed the software packages L2CXFT, CXFTV2, L1PMA, L2CXCXV and L2WPMA that are accessible through the scientific library systems of the *Collected Algorithms of the ACM* and *Computer Physics Communications*. He has published more than 70 research papers in journals, state of the art volumes of invited papers (1997, 2008, 2013) and conference proceedings and he is the author of 11 university textbooks (in Greek) since 1991. Part of his papers have been published in the journals IMA J Numer Anal (1991×2), Intl Trans Oper Res Societies (1994), Math of Computation (1990, 1995), Appl Numer Math (2001), JCAM (2002, 2004), Comp Optimization and Appl (2004), Computer Physics Comm (CPC, 1997, 2003, 2006), ACM Trans On Math Software (1995, 2007), IAENG Intl J. of Applied Mathematics (2008×2, 2009, 2013), Computational Statistics and Data Anal (2005, 2010).

He has studied as a grantee of the State Scholarship Foundation of Greece (undergraduate 1974-79 and PhD 1981-84) and, while a research student, received the ‘J. T. Knight Prize of Mathematics 1983’, University of Cambridge [3]<sup>1</sup>. He has been awarded by the ‘National Contribution of Greece to IFORS 93 (International Federation of Operations Research Societies)’; ‘Best Student Paper Award of The 2007 International Conference of Computational Statistics and Data Engineering’ by the International Association

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<sup>1</sup> Numbers in square brackets refer to the list of I. C. Demetriou’s publications (Table 1).

of Engineers for the paper [31] presented at the World Congress on Engineering 2007, Imperial College, London; ‘Best Paper Award of The 2008 International Conference of Computational Statistics and Data Engineering’ by the International Association of Engineers for the paper [32] presented at the World Congress on Engineering 2008, London; «Certificate of Merit 2012» for [64]; and, «Best Paper Award 2013» for [67].

Since 1999, he acts also as an academic evaluator in national and international committees for tertiary education (Chairman of this committee is Professor Malcolm Pemberton, UCL, London). He is a member of scientific/organizing committees of international conferences (**HERCMA** Athens 1992-94-96-98-2001-2003-2005-2007-2009; **ERCIM** Computational Management /**CSDA** Econometrics Limassol 2003, Neuchatel 04, Limassol 05, Genève 07, Neuchâtel 08, Limassol 09, London 10; Co-chair of ICCSDE, **WCE** London 2007-08-09-10-11-12-13; **3rd OMS** Optimization Methods and Software, Chania, Crete 2012). He has made over 70 presentations in world conferences. His CV has appeared in the international editions Who’s Who in the World, Who’s Who in Science and Engineering, Dictionary of International Biography, Pembroke College Who’s Who (Univ. of Cambridge).

His papers have received several citations and references are made in various sites. Some of his papers have received significant characterizations from the journals’ referees. Moreover, some opinions that have been in public include those of Professor John Rice, founder of ACM TOMS, 18.10.1996 letter: ‘*I found your paper on data fitting quite interesting. I have been interested in this question since 1950’s and your approach to the problem is a novel one that has the potential to be quite useful.*’; Professor Philip Davis of approximation theory, referring to the divided differences approach for data smoothing at PowellFest 1996 Cambridge (27-30 July, 1996): ‘*work of considerable social depth*’; and, Dr. Jian Lu, Laurence Livermore National Laboratory: ‘*I think this method – remark: [7], [8], [20] – has a great potential in signal and image processing... I am excited about it...*’.

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## 2. Postgraduate studies and work in education

**Postgraduate studies:** He finished his M. Phil. [1] by research in the short time of 12 months (1980), under the supervision of Professor D. J. Evans, a collaboration that resulted to published work including papers [2], [4], [6]. In 1981, he sat for exams and succeeded to achieve the sole offered scholarship from the State Scholarship Foundation of Greece and then he pursued his Ph.D. studies in approximation and optimization at University of Cambridge, being a member of Pembroke College, under the generous guidance of his supervisor Professor M. J. D. Powell, FRS. In 1983 he has been awarded the J. T. Knight Prize (eligible to submission for this award are postgraduate students that have completed 12-15 months in research) for his monograph [3]. As a personal choice, he attended some demanding TRIPOS II and TRIPOS III courses on applied mathematics given at DAMTP (lectured by M.J.D. Powell, Arieh Iserles, F.G. Friedlander, Colin Cryer, John Skilling, Robert Harding). He has tutored Cambridge U. students in certain Tripos II and III courses. His Ph.D. thesis [5], through the development of new theory that is supported by novel and strong arguments, studied a new approach to data smoothing, resulting to some highly efficient methods and identifying important questions for further research.

During 1985-87 he served as an army lieutenant (compulsory national service) in Greece. During 1987-1992 worked as a computing freelancer, being also an invited lecturer or invited professor as indicated already. In 1992 he elected as an assistant professor at the University of Athens.

**Work in education and academic management:** Since 1992, Ioannis Demetriou works very actively for further improving the Department of Economics. He contributes as follows: **(1) Managerial / Technical work** (1995-2009): development and strengthening of the infrastructure of computer laboratories; and, organization of the MSc course in applied economics and finance. He reorganized the Informatics Lab so as to be able to accommodate the heavy demand for computer training from the students of School of Law, Economics and Political Sciences (about 15000 students attended training courses in 10 years on about 50 pc's). Since 2000, when lab personnel were almost annihilated, he restructured the computer training system by attaching it to the main programme of the department. **(2) As a Chairman** of the department, since 2009 up today, he has actively supported the development of teaching and research staff, increased library holdings, assumed the responsibility and proceeded successfully to the internal assessment of the department covering the periods 2003-9 and (annually) 2009-10-11-12-13, computerized the student administration system, developed new web sites ([www.econ.uoa.gr](http://www.econ.uoa.gr) and [www.en.econ.uoa.gr](http://www.en.econ.uoa.gr)); increased orientations in the MSc course; set up a new computing lab in brand new infrastructure and premises (57 Solonos Street, Athens); developed (since 2011) a departmental supporting research system; and, digitized the minutes of the department general assemblies of the period 1982-2013. Recently, new department premises have been prepared (1 Aristidou Street, Athens), satisfying a long standing need of the faculty. **(3) Educational work:** due to heavy demands for education on informatics, he usually teaches 9 hours per week and in certain semesters (1997-2001) used to teach 12 hpw. He introduced new courses on informatics and computer science (cf. [69], [72] and [78]), as well as three courses in postgraduate and doctorate levels (cf. [70], [73] and [79]), while he wrote textbooks that amount to 2000 pages (see Table 2). He has guided a number (>30) of postgraduate students for their MSc theses (see Table 5) that require 4-6 month work; few of them having done remarkably well and continued their studies to competent UK universities.