

Dr. Nickolas S. Sapidis, Professor

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E-mail: nsapidis@uowm.gr, URL: <http://mech.uowm.gr/index.php/staff/317>**University of Western Macedonia****Department of Mechanical Engineering**

Bakola & Sialvera Str., Kozani 50132, Greece

Google Scholar Citations: <http://scholar.google.com/citations?hl=en&user=2ZGJDgsAAAAJ>**PRESENT POST**

December 2009 – Today: *Professor*, subject: “Computational Design and Analysis of Machine Elements”, Department of Mechanical Engineering, University of Western Macedonia.

AREAS OF SPECIALIZATION

- *Design of Products and Systems:* Mechanical Design, Functional Design, Aesthetic Design, Product Life-Cycle Design, Concurrent Engineering, Reverse Engineering. Applications in: *Automobile Industry, Mechanical Systems, Shipbuilding, Fashion Industry.*
- *Computer-Aided Design (CAD):* Research, Design of Algorithms, and Software Development. Information Systems for Products and Processes. Hybrid CAD Systems combining Solids and Surfaces with Discrete Models. CAD based on Point Clouds. Product Lifecycle Management.
- *Computer-Aided Engineering (CAE):* Computational Methods for Analysis of Mechanical Structures. Automatic Finite-Element Model Construction, Integration of CAD and CAE systems.
- *Solid Modeling:* Models for Highly Complex Systems. Discrete Solid Models and Spatial Subdivisions. Computational Geometry. “Virtual Solid” Modeling of Design Constraints.
- *Geometric Modeling of Curves and Surfaces:* Bézier, B-spline, NURBS: Theory, Algorithms and Software. Interpolation/Approximation of Data with Curves and Surfaces. Aesthetic Design and Analysis of Surfaces. Automatic Fairing of Curves and Surfaces. Surface Modeling based on Point Clouds. Planar Development of Surfaces.
- *Virtual Reality and Simulation of Mechanical Systems:* CAD Models for Virtual Reality. Simulation of Design & Production Processes. Virtual Inspection, Maintenance, and Repair of Plants.
- *Interactive Computer Graphics and Computer Vision:* Graphical Models and Acceleration Techniques for Visualization. Interactive Techniques for Geometric Modeling. Range Image Processing. Reverse Engineering of CAD Models from Range Images.
- *Industrial Informatics:* Software Systems and Standards for Product Data Management. Integration, Optimization and Evaluation of CAD/CAE Systems. Web-based Product Data Modeling.

PERSONAL DATA

Born: September 16, 1961, in Skydra-Edessa, Greece.

Marital Status: Married, with one child.

EDUCATION

1993 *Ph.D. in Mechanical and Aerospace Sciences.*

Department of Mechanical Engineering, University of Rochester, USA.

Dissertation: “Domain Delaunay Tetrahedrization of Curved Polyhedra Defined in a Solid Modeling System”, supervised by Professor Renato Perucchio.

1988 *M.S. in Mechanical and Aerospace Sciences*

Department of Mechanical Engineering, University of Rochester, USA.

1987 *M.A. in Applied Mathematics.*

Department of Mathematics, University of Utah, USA.

Thesis: “Algorithms for Locally Fairing B-spline Curves”, supervised by Professor Gerald Farin.

1985 *Diploma in Naval Architecture and Marine Engineering.*

Department of Naval Architecture & Marine Engineering, National Technical University of Athens, Greece.

Thesis: “Interpolation and Smoothing with Splines in Tension”, supervised by Professor Theodore Loukakis.

ACADEMIC EXPERIENCE

ACADEMIC RESEARCH

December 2009 - Present: *Professor*, Department of Mechanical Engineering, University of Western Macedonia (UWM), Kozani, Greece.

- Leading research on “Computer-Aided Mechanical Design”. Current subjects: “New Product Development and Optimum Design for Elevators”, “Conceptual Mechanical-Design using Sketches in CAD”, “Reverse Engineering of Mechanical Components”, “Virtual Manufacturing”, and “Product-Information Modeling & Management”. Externally funded research projects:

- “Optimum Design and Dynamic Analysis of a Panoramic Elevator Frame through Numerical and Experimental Methods”, funded by: KLEEMANN SA, Scientific Responsible – Project Manager: Assist.Prof. D. Giagopoulos [UWM], 2015 – 2017 (N. Sapidis: Member of the Core Research Team).
- “Dynamic Analysis and Optimization of Systems of the company Kleemann S.A.”, funded by: KLEEMANN SA, Scientific Responsible – Project Manager: Assist.Prof. D. Giagopoulos [UWM], 2014 – 2016 (N. Sapidis: Member of the Core Research Team).
- “Verification of Structural Integrity of a Hydraulic Lift using Progressive Safety Gear for the company Kleemann SA”, funded by: KLEEMANN SA, 2012 – 2013 (N. Sapidis: Scientific Responsible – Project Manager).
- “3D Object Retrieval”, funded by: funded by: European Union (European Social Fund - ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF), Research Funding Program: THALIS, Scientific Responsible – Project Manager: Assist.Prof. I. Pratikakis, Depart. of Electrical & Computer Engg., Democritus University of Thrace [DUTH], 2012 – 2015 (N. Sapidis: Member of the Core Research Team at DUTH).

April 2007 - November 2009: *Professor*, Department of Product and Systems Design Engineering (DPSDE), University of the Aegean (UA), Ermoupolis, Greece,

June 2001 - April 2007: *Associate Professor*, and

September 2000 - December 2001: *Instructor*, DPSDE, UA.

- Led research on “Computer-Aided Product Design”, focusing on: “solid modeling of complex arrangements”, “modeling design-constraints using virtual solids”, “sketch-based solid modeling”, and “CAD based on point clouds”. Samples of externally funded research projects with N. Sapidis as “Scientific Responsible – Project Manager”:

- “*Virtual Environment for Furniture Presentation – Software Design System*”, funded by: ELKEDE – Technology & Design Centre SA, 2006-2009.
- “*A Computer Aided Design System for Garment – Software Design*”, funded by: ELKEDE – Technology & Design Centre SA, 2006–2009.
- “*Prototyping and Design of Industrial Art Work: Advanced Methods for Products of High Complexity*”, funded by: Herakleidon Museum and FORTH Photonics Hellas A.E, 2006–2007.
- “*CAD System based on «Design Features» for Reverse Engineering Traditional Jewellery*”, funded by: Hellenic Silver and Goldsmith Centre S.A. (ELKA S.A.), 2006–2007.
- “*Cognitive Search and Retrieval of 3D Graphical Models*”, funded by: Ministry of Development of Greece/GSRT – PENED’03, 2005–2008.
- “*Advanced Computer-Aided Modeling System for Garment Design in 2D and 3D*”, funded by: ELKEDE – Technology & Design Centre SA, 2004–2007.
- “*Advanced Computer-Aided Modeling System for Garment Design: Procedures, Methodologies and Technologies for the Garment Design*”, funded by: ELKEDE – Technology & Design Centre SA, 2004–2005.
- “*Geometric Modeling and 3D Virtual Environment for Furniture*”, funded by: ELKEDE – Technology & Design Centre SA, 2004–2005.
- “*Information Management and Exchange in Network-Centric Product Design: Modeling Component Knowledge in Design Repositories*”, funded by: Ministry of Development/GSRT, Greek-French Research Collaboration Program, Partners: DPSDE/UA and Laboratoire de Productique et d’Informatique des Systemes Manufacturiers (PRISMa), Universite Lumiere Lyon 2, 2003–2005.
- “*An Integrated E-collaboration Environment for Designing Products and Production Procedures using 3D Modeling and Avatars (e-MERIT)*”, funded by: Ministry of Development/GSRT – Information Society Programme, 2003–2005.
- “*Preliminary Industrial-Product Design: Geometric/Information Models and Methods for Interactive Design*”, funded by: Ministry of National Education - “Heraclitus Research Grant”, 2002–2006.

December 2000 - January 2001: Research Associate, Agricultural University of Athens (Department of Science), Athens, Greece.

- Participated as Researcher in the research project:

- “*E-TAILOR: Integration of 3D Body Measurement, Advanced CAD, and E-Commerce Technologies in the European Fashion Industry*”, funded by: E.U. (I.S.T.-1999-10549), duration: 1/1/2000 - 31/12/2002. Partners: European Apparel and Textile Organisation (coordinator), BPI Hohenstein e.V., Athens Technology Centre S.A., Nottingham Trent University, University of Geneva, LECTRA SYSTEMES S.A., and others. Focus was on fundamental problems associated with the development of a European sizing infrastructure and of a virtual shopping methodology. Pursued research on geometric modeling of the human body and development of a customer-data infrastructure.

June 1999 - December 2001: *Research Affiliate*, Design Laboratory, Department of Ocean Engineering, Massachusetts Institute of Technology, U.S.A.

- Participated in research on reverse engineering of complex objects and on fitting spline surfaces to dense point-sets.

February 1995 - August 2001: Research Associate, Laboratory of Ship Design, Department of Naval Architecture and Marine Engineering (NAME), National Technical University of Athens (NTUA), Greece.

- Pursued/supervised research on: “Solid modeling of complex systems, hybrid CAD systems with solids and surfaces”, “Automatic fairing of curves/surfaces and aesthetic product design”, “Discrete geometric models and reverse engineering of CAD models from point sets”, “Computer graphics and interactive techniques for product design”.

- Participated as *Researcher* in three externally-funded research programs (project leader: Assoc. Prof. P. Kaklis):

- “*Intuitive Geometric Tools for Computer Aided Design and Manufacturing*”, funded by: G.S.R.T., Greek-French Research Collaboration Programme, duration: 2000 - 2001, Partners: NAME/NTUA and Université Joseph Fourier, Institut National Polytechnique de Grenoble.

- “*FAIRSHAPE: European Network on Automatic Fairing and Shape-Preserving Methodologies for CAD/CAM*”, funded by: E.U., Human Capital and Mobility Programme 1992-1994, duration: Dec. 1994 - Nov. 1997, Partners: NAME/NTUA, T.U. Darmstadt, Univ. of Florence, Univ. of Leeds, and others.

- “*New Fairing Methods for Curves and Surfaces in CAD. Applications in Ship Design and Manufacturing Industry*”, funded by: G.S.R.T., PENED’91, duration: Jan. 1994 - Dec. 1995.

September 1996 - August 2001: *Principal Investigator*, Computer Aided Geometric Design Group, Department of NAME/NTUA: Authorized Autodesk Educational Software Developer.

- Managed technical and financial matters related to the Group’s participation in the “Autodesk Developer Network”

- Pursued/supervised research and software development in AutoCAD, on subjects related to: “Virtual reality techniques for designing complex systems, and modeling design-constraints using “virtual solids””, “Shape-preserving curve and surface design, and data interpolation with shape control”. Participated as *Principal Investigator* in the research program:

- “*Development of a Hybrid CAD System for Modeling Surfaces and Solid Objects — Applications in Ship Design and Mechanical Engineering*”, funded by: GSRT - PENED’95, duration: Sept. 1996 - Oct. 1998, project leader: Assoc. Prof. P. Kaklis.

September 1987 - February 1991: *Honors Fellow*, Mechanical Engineering Department, University of Rochester, Rochester, NY, USA.

- Pursued doctoral research related to the automatic construction of a tetrahedral decomposition of a curved object defined in a solid modeling system. Focused on mathematical validity of decomposition, robustness of geometric/topological operations involved in the algorithm, and application in automatic finite-element meshing. Developed algorithms for triangulating 2-D curved domains using Constrained (Generalized) Delaunay Triangulation. Developed software for the solid modeler PADL-2, including a new version of its *octree generator* that allows for user interaction

September 1985 - June 1987: *Research Assistant*, Computer Aided Geometric Design Group, Department of Mathematics, University of Utah, Salt Lake City, UT, USA.

- Conducted research on knot-removal for B-splines, and on mathematically defining fair curves and surfaces; developed methods for automatically fairing B-splines. Developed a surface design system using triangular and rectangular patches.

Summer 1986: *Visiting Engineer*, Design Laboratory, Department of Ocean Engineering, MIT, USA.

- Studied the problem of preserving convexity in smoothing B-splines.

March - June 1985: *Research Engineer*, Ship & Marine Hydrodynamics Lab, Department of NAME/NTUA, Greece.

- Conducted research on shape-preserving splines in tension, and developed system for automatic creation of ship lines.

- Participated as *Researcher* in the research program (project leader: Prof. Th. Loukakis):

- “*Hydrodynamics of Ship Propulsion*”, funded by: NTUA, duration: March - June 1985.

SUPERVISION OF DOCTORAL DISSERTATIONS

May 2012 – Today: University of Western Macedonia / Department of Mechanical Engineering, Ph.D. Dissertation (ongoing) of Iraklis Chatziparasidis, “Automating Creation of Three-dimensional Geometric Models for Mechanical Design”.

December 2005 – November 2009: University of the Aegean (UA) / Department of Product and Systems Design Engineering (DPSDE), Ph.D. Dissertation of Dr. Alexander Agathos, “Part based 3D Representation for the Retrieval of 3D Graphical Models”.

September 2003 – September 2008: UA/DPSDE and Université Lumière Lyon 2, Ph.D. Dissertation of Dr. Mohammed Hichem Geryville: “An architecture for the Exchange and Sharing Product Information: Knowledge’s Transformation and Adaptation within the Extended Enterprise Context / Architecture multi-vues d’échange d’informations: Transformation et adaptation dans le cadre d’une Entreprise Etendue», Ph.D. Thesis co-supervised with Prof. A. Bouras (Université Lumière Lyon 2).

November 2002 – December 2007: UA/DPSDE, Ph.D. Dissertation of Dr. Sofia Kyratzi: “Industrial-Product Concept Development: Geometric and Information Models for Interactive Design”.

July 1996 – December 2003: National Technical University of Athens / Department of Naval Architecture and Marine Engineering, Ph.D. Dissertation of Dr. Gabriel A. Theodosiou: “Solid Modeling of Free Spaces in Plant Layout: Application in Design of Ship’s Engine Room”, *unofficial supervision* of Ph.D. Thesis officially supervised by Prof. P. Kaklis.

ACADEMIC TEACHING

December 2009 - Present: *Professor*, Department of Mechanical Engineering, University of Western Macedonia, Kozani, Greece.

- Teaching the undergraduate courses “Mechanical Engineering Drawing I & II”, “Statics”, “Machine Elements I”, and “Computer-Aided Design”.

April 2007 - Present: *Professor*, Department of Product and Systems Design Engineering, University of the Aegean, Ermoupolis, Greece (DPSDE/UA)

June 2001 - April 2007: *Associate Professor*, DPSDE/UA.

- Teaching the graduate courses “Product Design using Computers” and “Geometric Modeling”, and the undergraduate courses “Introduction to Computer-Aided Design” and “Engineering Design of Products and Systems”, and (with other members of the Teaching Staff) “Introduction to Design Theory and Methodology I & II”.

September 2000 - December 2001: *Instructor*, DPSDE/UA.

- Taught (with Dr. A. Yagou) the undergraduate courses “Introduction to Design Theory and Methodology I & II” and “History of Design and Technology I & II”.

September 1998 - August 2001: *Member of the Teaching Staff*, Inter-Departmental Postgraduate Course in Marine Technology and Science, National Technical University of Athens, Greece.

- Teaching (with Prof. P. Kaklis) the graduate course “Solid Modeling: Advanced Topics and the Virtual Ship”. Authored the textbook:

◆ N. Sapidis, *Geometric Modeling and Design using AutoCAD*, NAME/NTUA, 1999.

January 1996 - August 1999: *Special Instructor*, Department of Naval Architecture and Marine Engineering, National Technical University of Athens, Athens, Greece.

- Taught (with Prof. P. Kaklis) the undergraduate courses “CAD/CAM Systems for Ship Design and Construction” and “Computer Aided Ship Design”.

March - August 1998: *Special Instructor*, Mathematics Department, University of Athens, Greece.

- Taught the graduate course “Approximation Theory and Applications”.

September 1995 - August 1998: *Instructor*, Hellenic Air Force Academy, Dekelia, Greece.

- Taught courses on Computer Hardware/Software, Statics, Dynamics, Theory of Structures.

April 1996: *Visiting Professor*, Department of Software, Technical University of Catalonia, Barcelona, Spain.

- Taught parts of the courses “Hierarchical Data Structures” and “Curves and Surfaces II” of the Graduate Program in “Software”.

July 1993 - February 1995: *Instructor* (military service), School of Antisubmarine Warfare and School of Electronics, “Kanellopoulos” Training Centre, Hellenic Navy, Skaramagkas, Greece.

- Taught courses on Digital Electronics, Computer Programming, Hydroacoustics, and Fundamentals of Microprocessors.

June – July 1986: *Visiting Engineer*, Design Lab, Ocean Engineering Department, MIT, Cambridge, USA.

- Presented a series of seminars (20 hours) on various subjects related to “*Geometric Modeling*”.

September 1985 – August 1986: *Teaching Assistant*, Mathematics Depart., University of Utah, Salt Lake City, UT, USA.

- Led discussion sessions for “*Curves and Surfaces for CAD*” (series of three quarter courses).

PROFESSIONAL EXPERIENCE

INDUSTRIAL EXPERIENCE: CAD/CAE SYSTEMS & PRODUCT DESIGN

September 1998 - November 2000: *CAD/CAE Engineer and Naval Architect & Marine Engineer*, Marine Technology Development Company S.A., Athens, Greece.

- Customization, optimization, application, integration and management of computer hardware and CAD/CAE software. Training engineers in CAD/CAE.

- Provided software solutions to integrating heterogeneous CAD systems (TRIBON, AutoCAD, NAPA, etc) on networked computers. Design and finite-element analysis of mechanical systems. Three-dimensional modeling for detail engineering and design visualization/validation. Production information development.

- Provided the above services also to Elefsis Shipbuilding and Industrial Enterprise S.A. (“Elefsis Shipyards”), in the context of a collaboration between the two companies.

- Participated as *Research Engineer* in the research project:

- “*Design and Hydrodynamic Optimization of RO-RO Passenger Vessel*”, funded by: General Secretariat for Research & Technology (G.S.R.T.), EPET-II, duration: Sept. 1998 - Oct. 2000. Partners: National Technical University of Athens (coordinator), Elefsis Shipyards, Hellenic Register of Shipping, Marine Technology Development Company S.A. Duties included: three-dimensional ship modeling, conceptual design evaluation, managing CAD work, supporting collaboration of design teams, and engineering calculations.

February 1991 - February 1993: *Consulting Research Scientist*, Design Centre, General Motors Research & Development Centre, Warren, MI, USA.

- Developed software for automatic “aesthetic analysis” and fairing of curves related to automobile design. Developed a surface-design system for automatically constructing CAD surface-models from physical prototypes.

INDUSTRIAL RESEARCH & DEVELOPMENT

February 1991 - February 1993: *Consulting Research Scientist*, Computer Science Department, General Motors Research & Development Centre and General Motors Design Centre, Warren, MI, USA.

- Pursued research on integrating computer vision methodologies with geometric modeling techniques for automatically constructing surfaces that represent high volume geometric signals (“clouds of points”). Developed a surface-design system, for GM Design Centre, for automatically constructing parametric or implicit surfaces from prototypes, e.g., clay models. Developed/implemented algorithms for controlling the curvature of parametric curves.

INDUSTRIAL TRAINING

December 2004 – January 2005: Training Instructor, Neorion KEK (Syros Shipbuilding & Industrial Enterprises SA), Ermoupolis.

- Training personnel on the subject “Machining Technologies”.

November 2002 - June 2003: Training Program of the University of the Aegean (Scientific Responsible: N. Sapidis).

- “Quality Assurance, Quality Control and Metrology”, Bank of Greece, Printing Works Department, Athens.

March - May 2000: Training Instructor, Elefsis Shipbuilding and Industrial Enterprise SA, Elefsis.

- Training personnel on the subject “Use of CAD/CAM Systems”, with emphasis on the AutoCAD and AutoCAD Mechanical systems.

ADMINISTRATION AND MANAGEMENT

April 2007 – November 2009: *Professor*, subject: “*Computer-Aided Product Design*”, Department of Product and Systems Design Engineering, University of the Aegean.

December 2001 – April 2007: *Associate Professor*, subject: “*Computer-Aided Product Design*”, Department of Product and Systems Design Engineering, University of the Aegean.

- *Senate of the University of the Aegean: Member (representing the Assoc. Professors of the University)*, Acad. Years 2002-03 & 2005-06.

- **Graduate Program “Design of Interactive and Industrial Products and Systems” of DPSDE/UA:** Associate Director, 11/1/2006 – 30/6/2006, Director, 12/11/2008 – 01/06/2009.

- **Research Unit of the University of the Aegean:** Member, 13/5/2002 – 31/08/2005.

- **Technical Council of the University of the Aegean:** Member, 31/3/2003 – 17/10/2006, President, 18/10/2006 – 26/02/2008.

February 1995 - August 2001: Research Associate & Special Instructor, Laboratory of Ship Design, Department of NAME/NTUA, Greece.

- In addition to research & teaching, my duties included:

- Collaboration with Assoc. Prof. P. Kaklis on supervising junior researchers, financial management of projects, and development/submission of research proposals.
- Management of all activities related to the CAGD Group’s membership in the “Autodesk Developer Network”.
- Management of the NAME Undergraduate Computer Laboratory and organizing the Ship Design Seminar, in collaboration with Prof. A. Papanikolaou (director of the Ship-Design Lab).

ACADEMIC SERVICE

MEMBER OF ELECTION COMMITTEE OF FACULTY POSITIONS:

- *March 2002 - Today:* Posts on various subjects with many Departments of Greek Universities.

MEMBER OF EXAMINATION COMMITTEE OF DOCTORAL THESES:

- *25 May 2007:* Doctoral Thesis of D. Zafiroopoulos, Aristotele University of Thessaloniki.
- *25 May 2007:* Doctoral Thesis of G. Nikolaidis, Aristotele University of Thessaloniki.
- *11 December 2006:* Doctoral Thesis of K. Kosta, “Virtual Reality Kernel with Support for Ship Life-cycle Modeling”, National Technical University of Athens.
- *16 December 2003:* Doctoral Thesis of Gabriel A. Theodosiou, “Solid Modeling of Free Spaces in Plant Layout: Application in Design of Ship’s Engine Room”, National Technical University of Athens.
- *15 March 2002:* Doctoral Thesis of Panagiotis Koutsabasis, “Agent-based Systems in an Information Society for All: An Information Systems Perspective”, University of the Aegean.
- *15 March 2002:* Doctoral Thesis of Michalis Konstantopoulos, “Development of Information Infrastructure: Framework, Assessment, Applications”, University of the Aegean.
- *November 1999 – January 2000:* Doctoral Thesis of Raphaëlle Chaine, “Segmentation d'ensembles non organisés de points 3-D d'une surface: diffusion anisotrope basée sur les graphes”, Université Claude Bernard Lyon 1, France.
- *July-September 1998:* Doctoral Thesis of Mourad Djebali, “Segmentation des images de profondeur utilisant les analyses multi résolution”, Université Claude Bernard Lyon 1, France.

MEMBER OF EXAMINATION COMMITTEE OF GRADUATE THESIS:

- *January 1999 - October 2001:* Graduate Thesis of Efthimios Kapsalis, “Applications of Differential Geometry in Product Design”, University of Athens.

PROFESSIONAL SERVICE

CONTRIBUTION TO THE ISO “TC184/SC4 INDUSTRIAL DATA” SUBCOMMITTEE

October 26-31, 2003: By invitation of its Leader, Dr. Michael J. Pratt, I participated in the Meeting of the ISO TC184/SC4/WG12 Parametrics Group at Futuroscope/Poitiers, France. I contributed to this Group’s work on “standards for engineering sketches” and presented my latest research on “sketch interpretation”.

PARTICIPATION IN THE “TECHNOLOGY FORESIGHT IN GREECE” PROGRAM, GSRT

November 2001 – March 2005: I was a member of the Working Group “Industrial Production and Manufacturing” and participated in all its activities.

PARTICIPATION IN GREEK TECHNICAL ASSOCIATIONS

Technical Chamber of Greece (TEE): Member, June 1985 – Today.

- Invited Speaker and Participant in the TEE Conference “*Education and the Practice of the Engineering Profession for the Public Benefit*”, June 23-25, 2003, NTUA. I gave a presentation entitled “Computer-Aided Design of Product and Systems: New Methods of Work and New Duties for Engineers” and participated in a “Panel Discussion about New Engineering Specializations”.

EDITORIAL DUTIES FOR INTERNATIONAL SCIENTIFIC JOURNALS AND CONFERENCES

MEMBER OF THE EDITORIAL BOARD OF INTERNATIONAL SCIENTIFIC JOURNALS:

- ***Advances in Computational Design (ACD), An International Journal:*** Co-Editor-in-Chief, 2015 – Today. Publisher: Techno-Press, Korea, <http://www.techno-press.org/?journal=acd&subpage=7>.
- ***Mathematical Design & Technical Aesthetics:*** Member of the Editorial Board, 2014 – Today. Publisher: Academic Publishing House Researcher, Russia, <http://mathdesign.ru/en/index.html>.
- ***Engineering Mathematics Letters:*** Member of the Editorial Board, 2012 – Today. Publisher: Science & Knowledge Publishing Corporation Limited, UK, <http://scik.org/index.php/eml>.
- ***3D Research:*** Member of the Editorial Board, 2011 – Today. Publisher: Springer, <http://www.springer.com/engineering/signals/journal/13319>.
- ***FTRA Journal of Convergence / Section C (Web and Multimedia):*** Member of the Editorial Board, October 2010 – Today. Publisher: Future Technology Research Association International (FTRA), <http://www.joc-journal.org>.
- ***International Journal of Intelligent Engineering Informatics:*** Managing Editor, 2010 – Today. Publisher: Inderscience Publishers, www.inderscience.com/ijiei.
- ***Scientific Programming:*** Member of the Editorial Advisory Board, 2009 – 2013. Publisher: IOS Press, <http://www.iospress.nl/loadtop/load.php?isbn=10589244>.
- ***International Journal of Computer Aided Engineering and Technology:*** Member of the Editorial Board, 2009 – Today. Publisher: Inderscience Publishers, www.inderscience.com/ijcaet.
- ***Mathematical Problems in Engineering:*** Associate Editor, 2008 – Today. Publisher: Hindawi Publishing Corporation, www.hindawi.com/journals/mpe.
- ***International Journal of Design Engineering:*** Member of the Editorial Board, 2006 – Today. Publisher: Inderscience Publishers, www.inderscience.com/ijde.
- ***Virtual and Physical Prototyping:*** Member of the Editorial Board, 2004 – 2015. Publisher: Taylor & Francis, www.tandf.co.uk/journals/titles/17452759.asp.
- ***International Journal of Product Lifecycle Management:*** Member of the Editorial Board, 2004 – Today. Publisher: Inderscience Publishers, www.inderscience.com/ijplm.
- ***Computer-Aided Design and Applications:*** Member of the Editorial Board, 2004 – Today. Εκδότης: Taylor & Francis, <http://www.tandfonline.com/toc/tcad20/current#.UpSSWCcSNyU>.
- ***International Journal of Product Development:*** Member of the Editorial Board, 2003 – Today. Publisher: Inderscience Publishers, www.inderscience.com/ijpd.
- ***Computer-Aided Design:*** Member of the Editorial Board, 1996 – Today. The journal CAD (Elsevier Science: www.elsevier.com/locate/cad) has been published continuously since 1968. It is the oldest scientific journal in the fields of CAD/CAE/CAM & Computer Graphics.

GUEST EDITOR OF JOURNAL SPECIAL ISSUES:

- N. Sapidis (topical editor), Topical Issue on “3D Research and Technologies for Mechanical Engineering and Industrial Design”, *3D Research*, vol. 3, no. 2, 2012.
- P. Bartolo, N. Sapidis (guest editors), Special Issue on “Virtual Prototyping”, *International Journal of Computer Applications in Technology*, vol. 30, no. 3, 2007.
- O. López-Ortega, N. Sapidis, D. Wallace (guest editors), Special Issue on “Application of Artificial Intelligence and Virtual Reality to Product Lifecycle Management”, *Int'l Journal of Product Lifecycle Management*, vol. 1, no. 3, 2006.
- N. Sapidis, M.S. Kim (guest editors), Special Issue on CAD Education, *Computer-Aided Design*, vol. 36, no. 14, 2004.
- A. Bouras, Y. Ouzrout, N. Sapidis (guest editors), Special Issue on Supply Chain Management: Integration Strategies based on New Technologies, *International Journal of Technology Management*, vol. 28, no. 2, 2004.
- P. Kaklis, N. Sapidis, N.M. Patrikalakis (guest editors), Special Issue on Geometric Modeling Techniques, *Mathematical Engineering in Industry*, vol. 7, no. 2, 1999.
- P. Kaklis, N. Sapidis, N.M. Patrikalakis (guest editors), Special Issue on Reverse Engineering Techniques, *International Journal of Shape Modeling*, vol. 4, no. 3&4, 1998.

EDITOR OF BOOKS:

- P. Kaklis & N. Sapidis (editors), *Computer Aided Geometric Design: From Theory to Practice*, National Technical University of Athens, Athens, 1995/96.
- N. Sapidis (editor), *Designing Fair Curves and Surfaces: Shape Quality in Geometric Modeling and CAD*, Society for Industrial and Applied Mathematics (SIAM), Philadelphia, USA, 1994.

MEMBER OF THE INTERNATIONAL PROGRAM COMMITTEE OF CONFERENCES (PARTIAL REPRESENTATIVE LIST):

- ISVC'15: 11th International Symposium on Visual Computing, Las Vegas, USA, 14-16/12, 2015.
- CET 2015: 5th World Congress on Engineering and Technology, Suzhou, China, 23-25/10, 2015.
- PLM15: The IFIP WG5.1 12th Int'l Conference on Product Lifecycle Management, Doha, Qatar, 19-21/10, 2015.
- 2015 SIAM Conference on Geometric and Physical Modeling, Salt Lake City, USA, 12-14/10, 2015.
- 2nd International Conference on Dynamics of Disasters, Kalamata, Greece, 29/6-2/7, 2015.
- CGI 15: Computer Graphics International Conference, Strasbourg, France, 24-26/6, 2015.
- 3DOR 2015: 8th Eurographics Workshop on 3D Object Retrieval, Zurich, Switzerland, 2-3/5, 2015.
- CET 2014: 4th World Congress on Engineering and Technology, Wuhan, China, 26-28/10, 2014.
- SPM 2014: Symposium on Solid and Physical Modeling 2014, Hong Kong, 26-28/10, 2014.
- MESA2014: Symposium "Virtual Prototyping in Mechatronics", Ancona, Italy, 10-12/9, 2014.
- PLM14: The IFIP WG5.1 11th Int'l Conference on Product Lifecycle Management, Yokohama, Japan, 7-9/7, 2014.
- CGI 14: Computer Graphics International Conference, Sydney, Australia, 10-13/6, 2014.
- Pro-AM 2014: 1st International Conference on Progress in Additive Manufacturing, Singapore, 26-28/5, 2014.
- 3DOR 2014: Eurographics Workshop on 3D Object Retrieval, Strasbourg, France, 6/4, 2014.
- ADM2013: 5th International Conference on Advanced Design and Manufacture, Valencia, Spain, 25-28/9, 2013.
- CGiV2013: 10th Int'l Conf. Computer Graphics, Imaging & Visualization, Univ. of Macau, Macau, China, 6-8/8, 2013.
- VRAP 2013: Int'l Conference on Advanced Research in Virtual and Rapid Prototyping, Leiria, Portugal, 1-5/10, 2013.
- CGI 2013: Computer Graphics International Conference, Hannover, Germany, 11-14/6, 2013.
- PLM13: The IFIP WG5.1 10th Int'l Conference on Product Lifecycle Management, Nantes, France, 6-10/7, 2013.
- APPLIED COMPUTING 2013: IADIS Int'l Conference, Fort Worth, Texas, USA, 23-25/10, 2013.
- SIAM Conference on Geometric and Physical Modeling (GD/SPM13): Denver, USA, 11-14/11, 2013.
- ISVC'13: 9th International Symposium on Visual Computing, Rethymnon, Crete, Greece, 29-31/7, 2013.
- CC3DR 2013: Collaborative Conference on 3D Research, Jeju Island, South Korea, 24-28/6, 2013.
- CAD'13: 2013 International CAD Conference and Exhibition, University of Bergamo, Bergamo, Italy, 17-20/6, 2013.
- 3DOR 2013: Eurographics Workshop on 3D Object Retrieval, Girona, Spain, 11/5, 2013.
- CGIM 2013: 14th IASTED Int'l Conference on Computer Graphics and Imaging, Innsbruck, Austria, 12-14/2, 2013.
- SPM'2012: SIAM/ACM Symp. on Solid & Physical Modeling, Dijon, France, 29-31/10, 2012.
- APPLIED COMPUTING 2012: IADIS Int'l Conference, Madrid, Spain, 19-21/10, 2012.
- CGiV2012: 9th Int'l Conf. Computer Graphics, Imaging & Visualization, Hsinchu, Taiwan, 24-27/7, 2012.
- ISVC'12: 8th International Symposium on Visual Computing, Rethymnon, Crete, Greece, 16-18/7, 2012.
- VIIP 2012: 10th IASTED Int'l Conf. Visualization, Imaging & Image Proc., Banff, Canada, 3-5/7, 2012.
- CC3DR 2012: Collaborative Conference on 3D Research, Seoul, South Korea, 25-29/6, 2012.
- CAD'12: 2012 International CAD Conference and Exhibition, Niagara Falls, Canada, 11-14/6, 2012.
- ISPHT 2012: 2nd IASTED Int'l Symposium on Imaging and Signal Processing in Healthcare and Technology, Baltimore, USA, 14-16/5, 2012.
- 3DOR 2012: Eurographics Workshop on 3D Object Retrieval (Eurographics 2012), Cagliari, Italy, 13/5, 2012.
- HEALTHINF 2012: Int'l Conference on Health Informatics, Vilamoura, Portugal, 4/2, 2012.
- STaMR 2012: First Int'l Conf. on Submarine Technology and Marine Robotics, Indian Institute of Technology Madras, Chennai, India, 14-15/1, 2012.
- WMS-11: 2011 Int'l Workshop on Web and Multimedia Services, Korean Information Technology Convergence Society, Jeju, Korea, 12-15/12, 2011.
- 2011 SIAM/ACM Joint Conference on Geometric and Physical Modeling, Orlando, Florida, USA, 24-27/10, 2011.
- VRAP 2011: 5th Int'l Conf. on Advanced Research in Virtual and Rapid Prototyping, Centre for Rapid and Sustainable Product Development, Leiria, Portugal, 28/9-1/10, 2011.

- ISVC'11: 7th International Symposium on Visual Computing, Las Vegas, Nevada, USA, 26-28/9, 2011.
- ADM2011: 4th International Conference on Advanced Design and Manufacture, Kunming, China, 21-23/9, 2011.
- CAD/Graphics 2011: 12th Int'l "CAD/Graphics 2011" Conference, Shandong University, Jinan, China, 15-17/9, 2011.
- CGIV2011: 8th Int'l Conf. "Computer Graphics, Imaging & Visualization", Singapore, 16-19/8, 2011.
- CAD'11: 2011 International CAD Conference and Exhibition, Taipei, Taiwan, ROC, 27-30/6, 2011.
- ISPHT 2011: IASTED Int'l Symposium on Imaging and Signal Processing in Healthcare and Technology, Washington DC, USA, 16-18/5, 2011.
- 3DOR 2011: Eurographics Workshop on 3D Object Retrieval (Eurographics 2011), Llandudno (UK), 10/4, 2011.
- HEALTHINF 2011: International Conference on Health Informatics, Rome, Italy, 26-29/1, 2011.
- ISVC'10: 6th International Symposium on Visual Computing, Las Vegas, USA, 29/11-1/12, 2010.
- APPLIED COMPUTING 2010: IADIS International Conference, Timisoara, Romania, 14-16/10, 2010.
- ADM2010: 3rd International Conference on Advanced Design and Manufacture, Nottingham, UK, 8-10/9, 2010.
- ACM SPM2010: Fifteenth ACM Symposium on Solid and Physical Modeling, Haifa, Israel, 1-3/9, 2010.
- CGIV2010: 7th Int'l Conference on Computer Graphics, Imaging and Visualization, Sydney, Australia, 10-13/8, 2010.
- PLM'10: 7th International Product Lifecycle Management Conference, Bremen, Germany, 12-14/7, 2010.
- CAD'10: 2010 International CAD Conference and Exhibition, Dubai, United Arab Emirates, 21-25/6, 2010.
- 3DOR 2010: Eurographics Workshop on 3D Object Retrieval (Eurographics 2010), Norrköping, Sweden, 2/5, 2010.
- ISVC'09: 5th International Symposium on Visual Computing, Las Vegas, USA, 30/11-2/12, 2009.
- 2009 SIAM/ACM Joint Conf. on Geometric and Physical Modeling, San Francisco, 9-11/10, 2009.
- VR@P'09: 4th Int'l Conf. Adv. Res. in Virtual & Rapid Prototyping, Leiria, Portugal, 6-10/10, 2009.
- ADM2009: 2nd International Conference on Advanced Design and Manufacture, Harbin, China, 24-26/9, 2009.
- PLM'09: 6th International Product Lifecycle Management Conference, Bath, U.K., 6-8/7, 2009.
- CAD'09: 2009 Int'l CAD Conference & Exhibition, Reno, USA, 8-12/6, 2009.
- HEALTHINF 2009: Int'l Conference on Health Informatics, Porto, Portugal, 14-17/1, 2009.
- PLM'08: 5th Int'l Conference on Product Lifecycle Management, Seoul, Korea, 9-11/7, 2008.
- CAD'08: 2008 Int'l CAD Conference & Exhibition, Orlando, USA, 23-27/6, 2008.
- GMP'08: Geometric Modeling and Processing 2008, Hangzhou, China, 23-25/4, 2008.
- APPLIED COMPUTING 2008: IADIS Int'l Conference, Algarve, Portugal, 10-13/4, 2008.
- HEALTHINF 2008: Int'l Conference on Health Informatics, Funchal, Madeira, 28-31/1, 2008.
- ISVC'07: 3rd Int'l Symposium on Visual Computing, Lake Tahoe, USA, 26-28/11, 2007.
- CYBERWORLDS 2007 - NASAGEM Workshop, Hannover, Germany, 24-27/10, 2007.
- VIIP'07: 7th IASTED Int'l Conf. Visual., Imaging & Image Proc., Palma de Mallorca, 29-31/8, 2007.
- CGIV'07: 4th Int'l Conf. Computer Graphics, Imaging & Visualization, Bangkok, 14-17/8, 2007.
- PLM'07: 4th Int'l Conference on Product Lifecycle Management, Stezzano, Italy, 11-13/7, 2007.
- GMAI'07: 2nd Int'l Conference on Geometric Modelling and Imaging, ETH Zurich, 4-6/7, 2007.
- CAD'07: 2007 Int'l CAD Conference & Exhibition, Honolulu, U.S.A., 25-29/6, 2007.
- APPLIED COMPUTING 2007: IADIS Int'l Conference, Salamanca, Spain, 18-20/2, 2007.
- ISVC'06: 2nd Int'l Symposium on Visual Computing, Lake Tahoe, U.S.A., 6-8/11, 2006.
- GMP'06: Geometric Modeling and Processing 2006, Pittsburgh, U.S.A., 26-28/7, 2006.
- CGIV'06: Int'l Conf. Computer Graphics, Imaging&Visualization, Sydney, Australia, 25-29/7, 2006.
- PLM'06: Int'l Conf. on Product Lufecycle Management, Bangalore, India, 10-12/7, 2006.
- GMAI'06: Int'l Conference on Geometric Modeling & Imaging, London, 5-7/7, 2006.
- CAD'06: Int'l CAD Conf. and Exhibition, Phuket Island, Thailand, 19-23/6, 2006.
- SPM'06: ACM Solid & Physical Modeling Symposium, Cardiff University, Wales, UK, 6-8/6, 2006.
- 2006 IADIS Int'l Conference on Applied Computing, San Sebastian, Spain, 25-28/2, 2006.
- CGIV'05: Int'l Conf. Computer Graphics, Imaging & Visualization, Beijing, China, 26-29/7, 2005.
- PLM'05: Int'l Conf. Product Lufecycle Management, Univ. Lumiere Lyon 2, Lyon, 11-13/7, 2005.
- Int. Conf. on Geometric Modeling, Visualization & Graphics 2005, Salt Lake City, Utah, USA, 21-26/7, 2005.
- CAD'05: International CAD Conf. and Exhibition, Bangkok, Thailand, 20-24/6, 2005.
- 2005 ACM Symposium on Solid and Physical Modeling (SPM), MIT, Cambridge, MA, USA, 13-15/6, 2005.
- Eurographics 2004: Annual Conf. of the European Assoc. for Computer Graphics, Grenoble, France, 30/8-3/9, 2004.

- CGIV'04: Int'l Conf. Comp. Graphics, Imaging & Visualization, Penang, Malaysia, 26-29/7, 2004.
- Computer Graphics Int. 2004: Annual Conf. Computer Graphics Society, Hersonissos, Crete, Greece, 16-19/6, 2004.
- 2004 ACM Symposium on Solid Modeling and Applications, Genova, Italy, 9-11/6, 2004.
- CAD'04: International CAD Conf. and Exhibition, Pattaya Beach, Thailand, 24-28/5, 2004.
- 5th Int'l Symp. on Tools and Methods of Competitive Engineering (TMCE 2004), Lausanne, Switzerland, 12-6/4, 2004.
- Eurographics 2003: Annual Conf. of the European Association for Computer Graphics, Granada, Spain, 1-6/9, 2003.
- GMAG'03: International Conf. on Geometric Modeling & Graphics, London, England, 16-18/7, 2003.
- 8th ACM Symp. Solid Modeling & Applications, University of Washington, Seattle, WA, USA, 16-20/6, 2003.
- 7th ACM Symp. Solid Modeling & Appl., Max-Planck-Institut für Informatik, Saarbrücken, Germany, 17-21/6, 2002.
- Computer Graphics Int. 1999: Annual Conf. of the Computer Graphics Society, Calgary, Canada, 7-11/6, 1999.
- Pacific Graphics '98: 6th Pacific Conference on Computer Graphics and Applications, Singapore, 26-29/10, 1998.
- Computer Graphics Int. 1998: Annual Conf. of the Computer Graphics Society, Hannover, Germany, 22-26/6, 1998.

REVIEW SERVICES TO INTERNATIONAL JOURNALS, CONFERENCES AND PUBLISHERS

REFEREE FOR THE INTERNATIONAL JOURNALS:

Journal of Computational and Applied Mathematics	Computer-Aided Design
Computer Aided Geometric Design	The Visual Computer
Graphical Models and Image Processing	ACM Transact. on Graphics
IEEE Computer Graphics and Applications	Engineering with Computers
IEEE Transact. on Visualization & Computer Graphics	Computer Graphics Forum
Finite Elements in Analysis and Design	Journal of Ship Research
ASME Journal of Computing & Information Science in Engg.	ETRI Journal
Applied Numerical Mathematics	Computing
Internat. Journal of Zhejiang University, JZUS(A&B)/SCIENCE	Journal of Symbolic Computation
Internat. Journal of Robotics & Automation	Rapid Prototyping Journal
Internat. Journal of Computational Geometry & Applications	

REFEREE FOR THE INTERNATIONAL CONFERENCES (PARTIAL REPRESENTATIVE LIST):

- CAD'06: International CAD Conf. and Exhibition, Phuket Island, Thailand, 19-23/6, 2006,
- SPM'06: ACM Solid and Physical Modeling Symposium, Cardiff University, Wales, UK, 2006,
- Eurographics 2004: Annual Conf. Of the European Assoc. for Computer Graphics, Grenoble, France, 30/8-3/9, 2004,
- Computer Graphics Int. 2004: Annual Conf. Computer Graphics Society, Hersonissos, Crete, Greece, 16-19/6, 2004,
- 2004 ACM Symposium on Solid Modeling and Applications, Genova, Italy, 9-11/6, 2004,
- CAD'04: International CAD Conf. And Exhibition, Pattaya Beach, Thailand, 24-28/5, 2004,
- 5th Int'l Symp. On Tools and Methods of Competitive Engineering (TMCE 2004), Lausanne, Switzerland, 12-6/4, 2004,
- 8th ACM Symposium on Solid Modeling & Applications, Seattle, WA, USA, 2003,
- 7th ACM Symposium on Solid Modeling & Applications, Saarbrücken, Germany, 2002,
- 4th Intern. Symposium on Tools & Methods of Competitive Engineering, Wuhan, China, 2002,
- 6th ACM Symposium on Solid Modeling & Applications, Ann Arbor, USA, 2001,
- SMI2001 International Conference on Shape Modeling & Applications, Genoa, Italy, 2001,
- 10th Intern. Conference on Computer Appl. In Shipbuilding, M.I.T., Cambridge, USA, 1999,
- Computer Graphics International Conference '99, Calgary, Canada, 1999,
- SIGGRAPH 98: 25th International Conference on Computer Graphics, Orlando, USA, 1998,
- Pacific Graphics '97: 5th Pacific Conference on Computer Graphics, Seoul, Korea, 1997,
- 13th Annual Symposium on Computational Geometry, Nice, France, 1997,
- 4th ACM/IEEE Symposium on Solid Modeling & Applications, Atlanta, USA, 1997,
- Eurographics'96, Poitiers, France, 1996,
- Computer Graphics International '96, Pohang, Korea, 1996

REVIEWER OF BOOK PROPOSALS FOR THE UNIVERSITY OF CYPRUS PRESS

February 2003 - Today: I review book proposals in the fields of Mathematics, Computer Science and Engineering.

ORGANIZATION OF INTERNATIONAL CONFERENCES

MEMBER OF THE LOCAL ORGANIZING COMMITTEE OF THE CONFERENCES

- 22nd European Workshop on Computational Geometry (EWCG), Delphi, Greece, 27-29/3, 2006,
- 10th International Conference on Computer Applications in Shipbuilding (ICCAS'99), Massachusetts Institute of Technology, Cambridge MA, June 7-11, 1999.

ORGANIZER OF INTERNATIONAL CONFERENCES AND SEMINARS:

- International Workshop: “*Computer Aided Geometric Design: New Trends and Applications*”, Anogia Academic Village, 16-20 June 1997, organizers: P. Kaklis & N. Sapidis.

The participants were 59 and the speakers 47, from 16 countries. Original research papers were presented as well as reviews of international research projects, like FIORES, FAIRSHAPE, etc. The proceedings were published in journal special issues (see above).

- International Research Seminar: *Computer Aided Geometric Design: From Theory to Practice*, NTUA, 31 May 1994, organizers: P. Kaklis & N. Sapidis.

The participants were 25 and the speakers 15, from 4 countries. Original research papers were presented, which were published in the book [Kaklis/Sapidis'95].

- Minisymposium: ‘Measuring & Improving Shape Quality in Surface Design’ (co-organizer: P. Kaklis), part of the Third SIAM Conference on Geometric Design, Tempe, AZ, USA, Nov. 1993, by invitation of the Organizing Committee.
- Panel session: ‘Finite Element Mesh Generation & the Automation of Engineering Analysis Applications’, part of the ASME Pressure Vessels & Piping Conference, New Orleans, LA, USA, June 1992, by invitation of the Computer Technology Committee of the Conference. The participants' talks are summarized in the publication [Sapidis/Shephard/Kelley/Meshkat'92] (see below).
- Minisymposium: “*Discrete Solid Models for Modeling and CAD/CAE Applications*” (co-organizer: Prof. R. Perucchio), part of the Second SIAM Conference on Geometric Design, Tempe, AZ, USA, Nov. 1991.

PARTICIPATION IN INTERNATIONAL CONFERENCES & SEMINARS

“KEYNOTE SPEAKER” BY PERSONAL INVITATION OF THE CONFERENCES:

- *Dagstuhl Seminar 08221: Geometric Modeling*, International Conference and Research Centre for Computer Science, Schloss Dagstuhl, Germany, May 25–30, 2008.
- *VRAP'05: 2nd International Conference on Advanced Research in Virtual and Rapid Prototyping*, Polytechnic Institute of Leiria, Leiria, Portugal, September 28 – October 1, 2005.
- *CAD'05: International CAD Conf. and Exhibition*, Bangkok, Thailand, June 20 – 24, 2005.
- *Symposium "Virtual Environments and Extended Reality (VE&ER)" - Conference of the VE&ER Research Teams of Spain* (“Entornos Virtuales y Realidad Aumentada – JORNADA DE ENCUESTRO”), Technical University of Catalonia, Barcelona, Spain, July 14, 2003.
- *Geometric Modeling and Processing 2002 (GMP 2002) Conference*, RIKEN - The Institute of Physical and Chemical Research, Saitama, Japan, July 10-12, 2002.
- *Dagstuhl Seminar 02201: Geometric Modeling*, International Conference and Research Centre for Computer Science, Schloss Dagstuhl, Germany, May 12-17, 2002.
- *7th ISPE International Conference on Concurrent Engineering*, Lyon, France, July 17-20, 2000, organized by the International Society for Productivity Enhancement (ISPE).

PERSONAL INVITATIONS TO INTERNATIONAL “CLOSED” (“BY INVITATION ONLY”) SCIENTIFIC CONFERENCES AND WORKSHOPS:

- *Geometric Modeling Seminar*, Int'l Computer Science Meeting and Research Centre Schloss Dagstuhl, Germany, 29/5-3/6/2005, organizers: G. Brunnett, G. Farin, R. Goldman, S. Hahmann.
- *The 5th International Workshop on Current CAx Problems: Holistic Product Development*, University of Kaiserslautern, Germany, April 5-7, 2004.
- *Geometric Modeling Seminar*, International Conference and Research Centre for Computer Science in Schloss Dagstuhl, Germany, 2002.
- *First Joint Israel-Greece Workshop on The Mathematics of Geometric Modeling*, National Technical University of Athens, 11-12/10/2001, organizers: Prof. P. Kaklis & Tel Aviv University, Technion (Israel Institute of Technology) & National Technical University of Athens.

- *CAD-Tools and Methods for Systems Development*, Workshop at the International Conference and Research Centre for Computer Science in Schloss Dagstuhl, Germany, 1998.
- *International Workshop on Creating Fair and Shape — Preserving Curves and Surfaces*, organized by the “Network FAIRSHAPE”, Berlin/Potsdam, Germany, 1997.
- *Second Workshop on Current CAX-Problems: Reverse Engineering*, Centre of Applied Mathematics, Germany, 1996.
- *Second & Third Dagstuhl Workshop on Geometric Modeling*, International Conference and Research Centre for Computer Science in Schloss Dagstuhl, Germany, 1993 & 1996.
- *CAD Tools for Products*, Workshop at the International Conference and Research Centre for Computer Science in Schloss Dagstuhl, Germany, 1995.

PRESENTATIONS AT INTERNATIONAL SCIENTIFIC CONFERENCES AND WORKSHOPS:

- “Sketching a Solid Model in a CAD System” (invited lecture), *Geometric Modeling Seminar*, Int’l Conference and Research Center for Computer Science, Schloss Dagstuhl, Germany, 25-30/5, 2008.
- “Virtual Engineering of Complex Systems based on Solid Modeling” (invited lecture), *2nd Int’l Conf. Advanced Research in Virtual & Rapid Prototyping*, Leiria, Portugal, 28/9-1/10, 2005.
- “Computational Tools for Concept Development based on Sketches & CAD Technologies” (invited presentation), *CAD’05: Int’l CAD Conf. & Exhibition*, Bangkok, Thailand, 20-24/6, 2005.
- “Smooth Discrete-Curves onto Clouds of Points: Algorithms and Applications in Digital Product-Design” (invited presentation), *Geometric Modeling Seminar*, Int’l Conference and Research Centre for Computer Science, Schloss Dagstuhl, Germany, 29/5-3/6, 2005.
- “Design of Complex Electromechanical Systems: CAD Representation of “Free Spaces” and the Required Solid-Modeling Infrastructure”, *6th Int’l Conference on Computer-Aided Industrial Design & Conceptual Design (CAID&CD 2005)*, Delft University of Technology, Holland, 29/5-1/6, 2005.
- “Information Models of Design Constraints in Complex Arrangements” (invited presentation), *5th Intern. Workshop on Current Cax Problems: Holistic Product Development*, University of Kaiserslautern, Germany, 5-7/4, 2004.
- “Information Models of Design Constraints for Collaborative Product Development” (invited Keynote Lecture), *Geometric Modeling and Processing 2002 Conference*, RIKEN, Saitama, Japan, 10-12/7, 2002.
- “Range-Image Segmentation and Model Reconstruction Based on a Fit-and-Merge Strategy”, *7th ACM Symposium on Solid Modeling & Applications*, Max-Planck-Institut für Informatik, Saarbrücken, Germany, 17-21/6, 2002.
- “Geometric Modeling of Design Constraints” (invited Keynote Lecture), *Dagstuhl Seminar 02201: Geometric Modeling*, Intern. Conference and Research Centre for Computer Science, Schloss Dagstuhl, Germany, 12-17/5, 2002.
- “A Solid-Modeling Methodology for Defining Design Constraints in Complex Arrangements” (invited presentation), *First Joint Israel-Greece Workshop on The Mathematics of Geometric Modeling*, National Technical University of Athens, 11-12/10/2001.
- “Towards Informationally-Complete Product Models of Complex Arrangements for Concurrent Engineering: Modeling Design-Constraints Using Virtual Solids” (invited Keynote Lecture), *7th ISPE International Conference on Concurrent Engineering*, Lyon, France, 17-20/7, 2000.
- “Operational Constraints in Computer-Aided Ship Design: Modeling the Required Virtual Solids”, *10th International Conference on Computer Applications in Shipbuilding*, Massachusetts Institute of Technology, Cambridge, USA, 7-11/6, 1999.
- “Planar Domain Simplification for Void Modeling” (invited presentation), *CAD-Tools and Algorithms for Product Design*, Workshop at the International Computer Science Meeting and Research Centre Schloss Dagstuhl, Wadern, Germany, 15-20/11, 1998.
- “A Spline-in-Tension with a Parabolic Limit-Curve” (invited presentation), *Int’l Workshop on Creating Fair and Shape-Preserving Curves and Surfaces*, Berlin, Germany, 14-17/9, 1997.
- “Spatial Curves in Industrial Design: Shape-Interrogation and Fairing Methods” (invited presentation), *Third Workshop on Geometric Modeling*, International Computer Science Meeting and Research Centre Schloss Dagstuhl, Germany, 27-31/5, 1996.
- “Surface Reconstruction from Dense Point Sets Through Region-Growing” (invited presentation), *Second Workshop on Current CAX-Problems: Reverse Engineering -- State of the Art & Solutions of System Vendors*, Tauberbischofsheim, Germany, 26-29/2, 1996.
- “Fitting Surfaces to Dense Point-Sets” (invited presentation), *Workshop on CAD Tools for Products*, International Computer Science Meeting and Research Centre Schloss Dagstuhl, Germany, 4-8/9, 1995.
- “Algorithms for Fairing Curves and Surfaces”, *Second Hellenic-European Conference on Mathematics and Informatics*, Athens, Greece, 22-24/9, 1994.

- “Combining Recursive Spatial Decompositions and Delaunay Tetrahedrizations for Discretizing Solid Models”, *Second SIAM Conference on Geometric Design*, Tempe, AZ, USA, 4-8/11, 1991.
- “Topological Validity and Computational Complexity of Algorithms for Delaunay Tetrahedrization of Solid Models”, *International Conference on Industrial and Applied Mathematics*, Washington, D.C., USA, 8-12/7, 1991.
- “Domain Delaunay Tetrahedrization of Arbitrarily Shaped Curved Polyhedra Defined in a Solid Modeling System”, *ACM Symposium on Solid Modeling Foundations and CAD/CAM Applications*, Austin, TX, USA, 5-7/6, 1991.
- “Solid/Solid Classification Operations for Automatic Meshing from Solid Models”, *1990 ASME International Computers in Engineering Conference*, Boston, MA, USA, 5-9/8, 1990.
- “Shape Preserving Triangulations of Arbitrary Planar Domains based on Delaunay Triangulation”, *SIAM Conference on Geometric Design*, Tempe, AZ, USA, 6-10/11, 1989.
- “Automatic Delaunay Tetrahedrization of Objects defined in a Solid Modeling System”, *SIAM Conference on Geometric Design*, Tempe, AZ, USA, 6-10/11, 1989.

INVITED SEMINARS AT UNIVERSITIES AND COMPANIES

- “Three-dimensional Geometric Modeling and Computer Graphics: Advances and Applications”, Two-day Scientific Symposium “*Mathematical Modeling in Physical Sciences and Modern Technologies*”, Mathematics Department, University of the Aegean, 7/6, 2002.
- “Geometric Modeling of Design Constraints in Complex Arrangements”, Institut für Geometrie, Technische Universität Wien, Austria, 6/12, 2001
- “Design Constraints in Solid Modeling”, Johannes-Kepler-Symposiums für Mathematik, Spezialforschungsbereich F013 “Numerical and Symbolic Scientific Computing”, Johannes Kepler Universität Linz, Linz, Austria, 5/12, 2001.
- “Informationally-Complete Representations of Design Constraints Using Virtual Solids”, Seminar, Dept. of Computer Engineering, Seoul National University, Korea, 12/4, 2001.
- “Virtual-Solid Modeling for Informationally-Complete Representations of Design Constraints”, Seminar, Doctoral Programme in Software, Department of Software, Technical University of Catalonia, Spain, 23/3, 2001.
- “Designing with Volumes: An Approach to Facilitating Complex System Arrangement”, Seminar, Laboratoire d'Informatique Graphique, Images et Modélisation, Université Claude Bernard Lyon 1, France, 24/1, 2000.
- “Geometric Modeling for Process Design”, Research Seminar, Intelligen, Inc., Scotch Plains, NJ, USA, 5/6, 1999.
- “Curves and Surfaces for the Definition of Geometric Models”, Geometry Seminar, Department of Mathematics, Aristotle University of Thessaloniki, Greece, 15 December, 1998.
- “Modeling Free Spaces in CAD: Virtual Solids and Related Problems of Geometric Modeling”, Lecture, Department of Mechanical and Industrial Engineering, University of Thessaly, Volos, Greece, 7 October, 1998.
- “Modeling Functionality-Constraints: Virtual Solids and the Related Geometric Problems”, Seminar, Laboratoire d'Informatique Graphique, Images et Modélisation, Université Claude Bernard Lyon 1, France, 18/9, 1998.
- “Discrete Solid & Surface Models for Simplifying and Accelerating CAD/CAE Processes”, Seminar, F.B. Mathematik, Technische Hochschule Darmstadt, Germany, 22/2, 1996.
- “Hybrid Methods for Constructing Fair Curves and Surfaces in CAD”, Seminar, Mathematics Department, University of Crete, Greece, 31 May, 1995.
- “Collaboration of Solid Models with Discrete Models in CAD/CAM/CAE”, Seminar, Series of Weekly Seminars, Computer Science Department, University of Crete, Greece, 30 May, 1995.
- “Delaunay Tetrahedrization of Solid Models for CAD/CAE Applications”, Seminar, Naval Architecture Laboratory, Department of Naval Architecture and Marine Engineering, NTUA, Greece, 18 July, 1990.
- “Automatic Tetrahedrization of Solid Models for CAD/CAE Applications”, Joint Design Laboratory (Depart. Of Ocean Engineering) and CADLAB (Depart. of Mechanical Engineering) Seminar, MIT, USA, 18/4, 1990.
- “Tetrahedrization of Solid Models for CAE Applications”, Aries Technology, Inc., Lowell, MA, USA, 17/4, 1990.
- “An Efficient Fairing Method for B-spline Curves”, Computer Aided Geometric Design Seminars, Computer Science Department, Arizona State University, USA, 16/4, 1987.
- “Intersection Problems in Computer Aided Geometric Design”, Computer Aided Geometric Design Seminars, Department of Mathematics, University of Utah, USA, 3/10, 1986.

HONORS AND AWARDS

1987-1991: Honors Fellowship, Mechanical Engineering Department, University of Rochester, Rochester, NY, USA.

1986-1987: Research Assistantship, CAGD Group, Department of Mathematics, University of Utah, Salt Lake City, UT, USA.

1985-1986: Special Teaching Assistantship, Department of Mathematics, University of Utah, Salt Lake City, UT, USA
1985-1988: Scholarship for Postgraduate Studies, Bodossaki Foundation, Athens, Greece.
1983-1984: Undergraduate Fellowship, National Fellowship Foundation, Athens, Greece.
1979-1980: Diomidis Komninos Award, National Technical University of Athens, Greece
1979-1980: Undergraduate Fellowship, National Fellowship Foundation, Athens, Greece.

PUBLICATIONS

UNIVERSITY THESES & DISSERTATIONS

- [A.1] N. Sapidis, "Interpolation and Smoothing with Splines in Tension", Diploma Thesis, Department of Naval Architecture & Marine Engineering, National Technical University of Athens, February 1985.
[A.2] N. Sapidis, "Algorithms for Locally Fairing B-spline Curves", M.A. Thesis, Department of Mathematics, University of Utah, June 1987.
[A.3] N. Sapidis, "Domain Delaunay Tetrahedrization of Curved Polyhedra Defined in a Solid Modeling System", Ph.D. Thesis, Department of Mechanical Engineering, University of Rochester, September 1992.

REFEREED JOURNAL PAPERS

- [B.1] G. Farin, G. Rein, N. Sapidis, A. Worsey, "Fairing Cubic B-spline Curves", *Computer Aided Geometric Design* 4(1), pp. 91-103, 1987.
[B.2] N. Sapidis, P. Kaklis, T. Loukakis, "A Method for Computing the Tension Parameters in Convexity-Preserving Spline-in-Tension Interpolation", *Numerische Mathematik* 54(2), pp. 179-192, 1988.
[B.3] N. Sapidis, P. Kaklis, "An Algorithm for Constructing Convexity- and Monotonicity-Preserving Splines in Tension", *Computer Aided Geometric Design* 5(2), pp. 127-137, 1988.
[B.4] G. Farin, N. Sapidis, "Curvature and the Fairness of Curves and Surfaces", *IEEE: Computer Graphics and Applications* 9(2), pp. 52-57, 1989.
[B.5] N. Sapidis, R. Perucchio, "Advanced Techniques for Automatic Finite Element Meshing from Solid Models" (*Review*), *Computer-Aided Design* 21(4), pp. 248-253, 1989.
[B.6] N. Sapidis, G. Farin, "Automatic Fairing Algorithm for B-spline Curves", *Computer-Aided Design* 22(2), pp.121-129, 1990.
[B.7] N. Sapidis, G. Farin, "Letter to the Editor: Shape Preservation and the Fairness of Curves", *Computer-Aided Design* 23(6), p. 460, 1991.
[B.8] N. Sapidis, R. Perucchio, "Delaunay Triangulation of Arbitrarily Shaped Panar Domains", *Computer Aided Geometric Design* 8(6), pp. 421-437, 1991.
[B.9] N. Sapidis, R. Perucchio, "Domain Delaunay Tetrahedrization of Solid Models", *Intern. Journal of Computational Geometry & Applications* 1(3), pp. 299-325, 1991.
[B.10] N. Sapidis, R. Perucchio, "Solid Classification Operations for Recursive Spatial Decomposition and Domain Triangulation of Solid Models", *Computer-Aided Design* 24(10), pp. 517-529, 1992.
[B.11] N. Sapidis, W. Frey, "Controlling the Curvature of a Quadratic Bezier Curve", *Computer Aided Geometric Design* 9(2), pp. 85-91, 1992.
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- ◆ SCOPUS / Citations by other authors to my research papers (1996-2016): **642.**

Note: Scopus is in progress of updating pre-1996 cited references.

OTHER REPORTS OF CITATIONS

Citations (self-citations are included) to my research papers according to “Google Scholar”:

<http://scholar.google.com/citations?hl=en&user=2ZGJDgsAAAAJ>

- ◆ GOOGLE SCHOLAR: **All Citations = 1572, Citations Since 2011 = 412** (last accessed: 12-02-2016).

INDUSTRIAL APPLICATION OF PUBLISHED RESEARCH

Some of my research results, described in the above publications, have been implemented in industrial CAD/CAE systems. According to technical publications and letters/certificates available in my files, methods and algorithms detailed in my papers have been implemented in the following CAD/CAE systems:

CAD/CAE System	Owner/User	CAD/CAE-Software Developer & Scientific Responsible
1995: “Praxiteles” system for ship design	U.S. Navy, USA	MIT, Ocean Engineering Depart., Design Lab, <i>Professor N.M. Patrikalakis</i>
1993: Several CAD systems for automobile design developed/used by the General Motors Design Center	General Motors Design Center, USA	General Motors Design Center Design Processes Engineering, <i>Jeffrey A. Stevens, Manager</i>
1995: I/FEM system for Finite Element Analysis	INTERGRAPH, USA	INTERGRAPH Analysis Applications <i>Jeffert E. Delmas, Senior Manager</i>

1996: "Tribon Initial Design" system for ship design	Tribon Solutions, UK	Tribon Solutions <i>Andrew Ives-Smith, Engineer</i>
1996: SYRKO system for automobile design	Mercedes-Benz AG, Germany	Mercedes-Benz AG <i>Dr. Ekkehart Kaufmann</i>