



## Vasileios P. Drakopoulos

---

**CONTACT INFORMATION** Department of Computer Science & Biomedical Informatics  
University of Thessaly  
2–4 Papasiopoulou St.  
Lamia 35131, Greece

*Voice:* +(22310) 6-6722  
*Fax:* +(22310) 6-6939  
*E-mail:* vdrakop@uth.gr  
*WWW:* <http://vdrakop.users.uth.gr>

**PERSONAL INFORMATION**

Date of birth: July 27, 1968  
Place of birth: Athens  
Nationality: Greek  
Marital status: Married

**EDUCATION**

**National and Kapodistrian University of Athens, Athens, Greece**

Ph.D., Theoretical Informatics, Department of Informatics & Telecommunications, February 1999

- Dissertation Topic: “Dynamics of rational iteration methods and fractal functions: Algorithmic construction and their computer graphics representation”
- Supervisor: Alexander Böhm†

M.S., Indicatory of Informatics and Operations Research, September, 1992

- Thesis Topic: “Introduction to fractals and chaotic dynamics”
- Supervisor: Alexander Böhm†.

B.A., Mathematics, Department of Mathematics, September, 1990

### RESEARCH INTERESTS

Fractal and Computational Geometry, Computer Graphics, Dynamic Systems, Computational Complex Analysis, Image Processing and Compression, Human-Computer Interaction as well as Didactics of Informatics, Computer Science and ICT.

### HONOURS AND AWARDS

- Student Scholarship, Bodosakis Foundation: 1992–1993, 1993–1994, 1994–1995.
- Postdoctoral Scholarship, (Greek) State Scholarships Foundation (IKY): 1999–2000.

Prize for the best research paper in the field of nonlinear science from the Center of Research and Applications of Nonlinear Systems (1999). <http://thalis.math.upatras.gr/~rans/vravio.html>

### PROFESSIONAL EXPERIENCE

#### CIVIL SERVICE POSITIONS

05/09/1994–22/02/2016 Secondary School Teacher of Informatics.  
22/12/2011 Second specialisation attribution of Mathematics, Π.Ε. 03 branch.  
1999–2001, 2003–2007 Head of Centre of Informatics and New Technologies in the First Secondary Education Directorate of Athens.

---

†A. Böhm passed away on 1st May 1998.

12/01/2012–22/02/2016 School Advisor of Informatics in Secondary Education of Central Greece with basis in Levadeia and responsibility region Boeotia and Euboea prefectures.

2003–today Evaluator, member of the Central Register of Evaluators (E.M.A.) of the Ministry of Employment & Social Protection.

1999–2000 Lecturer (under the provision of the 407/80 Presidential Decree), Department of Informatics, N.K.U.A.

2000–2003, 2004–2005 Lecturer (under the provision of the 407/80 Presidential Decree), Department of Informatics & Telecommunications, N.K.U.A.

2005–2014, 2015–2016, 2017–2018 Professor-Tutor at Hellenic Open University (E.A.Π.) of the “Mathematics for Informatics I” module in “Computer Science” course.

26/01/2008–05/07/2013 Scientific Fellow with doctoral degree, Department of Informatics, School of Technological Applications, T.E.I. of Athens.

01/10/2012–15/02/2013 Lecturer (under the applicable law), Department of Computer Science and Biomedical Informatics, University of Central Greece.

09/03/2015–06/07/2015 Scientific Fellow with doctoral degree, Department of Informatics Engineering T.E., School of Technological Applications, T.E.I. of Athens.

23/02/2016–today Assistant Professor in the subject area “Graphics-Human Computer Interaction”, Department of Computer Science and Biomedical Informatics, University of Thessaly.

## ACADEMIC EXPERIENCE

### TERTIARY EDUCATION

#### Undergraduate courses

#### National and Kapodistrian University of Athens, Department of Mathematics

*Teaching Assistant*

**September, 1991 – February 8, 1999**

Duties at various times have included office hours and leading weekly computer lab exercises.

- *Applied Data Analysis*, Teaching Assistant, Fall Semester 1991–1992.
- *Informatics II*, Teaching Assistant, Spring Semester 1994–1996.
- *Informatics I*, Teaching Assistant, Fall Semester 1995–1996.

#### National and Kapodistrian University of Athens, Department of Informatics

*Instructor*

**February 9, 1999 – present**

Co-taught undergraduate and postgraduate level courses for the Master of Science in Computational Science and Advanced Information Systems. Shared responsibility for lectures, exams, homework assignments and grades.

- *Computational Geometry*, Lecturer, Department of Informatics & Telecommunications, Fall Semester 2002–2003.
- *Informatics I*, Lecturer, Department of Mathematics, Fall Semester 2004–2005.
- *Computer Graphics-Fractals*, Lecturer, Department of Informatics & Telecommunications, Spring Semester 1997–2000.

#### National and Kapodistrian University of Athens, Department of Informatics & Telecommunications

*Instructor*

**February, 1999 - present**

Taught undergraduate and postgraduate level courses for the Master of Science in Computational

Science and Advanced Information Systems.

- *Computational Geometry*, Lecturer, Department of Informatics & Telecommunications, Fall Semester 1999–2002.
- *Special topics on Theoretical Informatics*, Lecturer, Department of Informatics, Spring Semester 1999–2003, 2004–2005.
- *Computer Graphics, Visualisation, Fractals*, Lecturer, Department of Informatics & Telecommunications, Spring Semester 2000–2006, Fall Semester 2006–2008.
- *Chaos & Dynamic Systems*, Lecturer, Department of Informatics & Telecommunications, Fall Semester 2001–2003, 2004–2005.

**Special Topics of Theoretical Informatics (Complexity, Fractal and Computational Geometry) (ΘΠ16):** Convexity, triangulation, sweeping, partition and point location, Voronoi and Delaunay diagrams, incisions and visibility problems, recent developments using random sampling methods, shape matching, proximity and nearest neighbour problems, motion design and conflict identification, influence of numerical results in geometric calculations, applications in motion design, visibility preprocessing, recognition and standards-based GIS, invariant curves, bifurcation and normal forms, invariant hyperbolic sets and symbolic dynamics, Chaos Theory, Theorems of Birkhoff and Moser, applications, complex dynamics, fractals and multifractals, fractal Julia and Mandelbrot sets, fractal interpolation surfaces. Literature reading and a presentation or a project are required.

**Computational Geometry (ΘΠ09):** Design – analysis of geometric data processing algorithms, geometric spaces and algebraic representation of points, lines, curves, planes, surfaces, etc., geometric duality, space subdivisions and surface arrangements, the Zone theorem and its applications, Davenport – Schinzel sequences, applications, convex hull of points and algorithms for finding it, Voronoi and Delaunay diagrams, ways of computing them, proximity problem solutions, point and arrangement triangulations, applications, range searching techniques: subdivision trees, techniques based on random samples such as  $\varepsilon$  – nets and  $\varepsilon$  – approximations, parametric searching, applications in robotics, computer vision, graphic and artificial design.

**Computational Geometry (ΘΠ11):** Section problems and visibility, convex hull in 2 and 3 dimensions, divide and conquer method, volume calculation polyhedron, linear optimization, randomness, triangulation in two dimensions, vertical subdivision, partition and point detection, provisions line segments and triangles, dualism, Voronoi diagram (proximity), scanning method, Delaunay triangulation, robot motion through barriers, applications in computer aided design and the mesh generation, implementation problems, degenerate data and perturbation.

### Hellenic Open University

*Instructor*

October, 2005 - present

Taught modules for the degree level course in Computer Science.

- *Mathematics for Informatics I*, Professor - Tutor, 2005–2007.

### University of Central Greece, Department of Computer Science and Biomedical Informatics

**Computer Graphics (5CI02):** Computer Graphics input and output devices. Rasterisation algorithms of simple geometric curves (line segments, circles and conic sections). Antialiasing techniques. polygon filling algorithms, 2D line and polygon clipping algorithms. 2D and 3D coordinate systems and transformations, composite transformations, homogeneous coordinates, projections and viewing transformations. Model representation and simplification. Parametric curves and surfaces, surface representation and deformation, application to anatomical models. Colour models, halftone and dithering, illumination and shading models. Visualisation of 3D data, surface and volume rendering, applications in biomedical data, Digital Reconstructed Radiograph (DRR) from CT data, surface triangulation algorithms, 3D surface reconstruction, marching cubes algorithm

for rendering medical data. Elastic transformations, geometric deformation of images in 2D and 3D with application in spatial cross-modal image registration e.g. CT - Single-photon emission CT (SPECT), in radiotherapy design and surgery simulations. Construction of 3D anatomical shape atlases. Information fusion from different imaging systems.

**Human Computer Interaction (7CI04):** Introduction to Human-Computer Interaction (HCI), definitions, historic overview, interaction techniques. Cognitive references, optical perception, cognitive models (model human processor, Norman's user-system interaction model, distributed models), knowledge representation and mental models. Principles of interactive system design, the three pillars of design, design outlines, icon design. Design evaluation, selection criteria of evaluation techniques, styles of evaluation (laboratory study, field study), technical evaluation of system design (Cognitive walkthrough, heuristic evaluation, review-based evaluation, model-based evaluation). Implementation evaluation, evaluation techniques of an implemented system, empirical methods (experimental evaluation, observation techniques, query techniques). Goals-Operations-Methods-Selection rules (GOMS) model family, evaluation based on GOMS models, GOMS and related models, applied analysis of GOMS on design. Keystroke-Level Model (KLM), Card, Moran & Newell GOMS (CMN-GOMS), Natural GOMS Language (NGOMSL), Cognitive Perceptual Motor GOMS (CPM-GOMS). Web design. Electronic commerce system design. Design for all, design for people with special needs.

#### **Technological Educational Institution of Athens, Department of Informatics**

**Discrete Mathematics (N2-2030):** Introduction to logic and proofs; propositional logic, propositional equivalences, predicates and quantifiers. Set theory; set operations, finite and infinite sets. Relations and functions; properties of binary relations, equivalence relations, partial orderings, chains and antichains. Counting; the pigeonhole principle, permutations and combinations, generating functions. Computability; languages and grammars, finite-state machines, language recognition. Graphs; planar, weighted and directed graphs, trails, paths and circuits, Euler paths and circuits, Hamilton paths and circuits, the travelling salesman problem. Trees; spanning and binary trees, algorithms for trees and graphs. Algorithms; complexity of algorithms, properties of integer numbers, primes and greatest common divisors, mathematical induction and recursion, discrete arithmetic functions.

#### **University of Thessaly, Department of Computer Science and Biomedical Informatics**

**Mathematical Analysis I (1CI01):** Sets. Mappings. Real numbers ( $\mathbb{R}$ ). Axiomatic foundations of the real numbers. Rational numbers. Intervals. Distance. Neighbourhoods. Classification of points of  $R$ . Open and closed sets. Sequences of real numbers. Limit of a sequence. Operations with limits. The Cauchy criterion. Monotonic sequences. Contraction sequence. Recurrence sequences. Difference equations. Series. Basic tests for convergence of series. Continuity, derivative of a function. Basic theorems. Leibniz's rule. Derivative of composite function. Inverse functions. Derivative of an inverse function. Inverse trigonometric functions. Hyperbolic functions. Inverse hyperbolic functions. Derivative of implicit functions. Differential of a function. Derivatives and differentials of higher order. Taylor's polynomials and Taylor's series. Power series. Indefinite integral. Basic methods of computing indefinite integral. The Riemman integral. Properties of the definite integral. The fundamental theorem of calculus. Applications of the definite integral. Fourier series. Improper integral. Relationship between improper integrals and series. Basic tests for convergence of improper integrals. Ordinary differential equations. Separable differential equation. Linear differential equations of first order. Linear differential equations of second order with constant coefficients. Euler differential equation.

**Human Computer Interaction (2CI02):** Introduction to Human-Computer Interaction (HCI), definitions, historic overview, interaction techniques. Cognitive references, optical perception, cognitive models (model human processor, Norman's user-system interaction model, distributed models),

knowledge representation and mental models. Principles of interactive system design, the three pillars of design, design outlines, icon design. Design evaluation, selection criteria of evaluation techniques, styles of evaluation (laboratory study, field study), technical evaluation of system design (Cognitive walkthrough, heuristic evaluation, review-based evaluation, model-based evaluation). Implementation evaluation, evaluation techniques of an implemented system, empirical methods (experimental evaluation, observation techniques, query techniques). Goals-Operations-Methods-Selection rules (GOMS) model family, evaluation based on GOMS models, GOMS and related models, applied analysis of GOMS on design. Keystroke-Level Model (KLM), Card, Moran & Newell GOMS (CMN-GOMS), Natural GOMS Language (NGOMSL), Cognitive Perceptual Motor GOMS (CPM-GOMS). Web design. Electronic commerce system design. Design for all, design for people with special needs.

**Mathematical Analysis II (2CI01):** Euclidean space  $\mathbb{R}^n$ . Neighbourhoods. Classification of points in  $\mathbb{R}^n$ . Open and closed sets. Sequences. Basic theorems. Functions of several variables. Limit of a function. Operations with limits. Continuous function. Properties of continuous functions. Partial derivatives. Partial derivatives of higher order. Differentiable function. Total differentials. Differentials of higher orders. Differentiation of composite functions. Implicit functions. Jacobians. Transformations. Inverse transformations. Directional derivatives. The mean-valued theorem and Taylor's theorem for several functions. Extreme values. Extreme values under constraints. Double and triple integrals. Scalar and vector fields. Gradient, Divergence and Curl. Line integral of first and second kind. Green's formula. Surface integral of first and second kind. Stokes' theorem. Gauss' theorem. Conservative field. Solenoidal field.

**Discrete Mathematics (2CI02):** Introduction to logic and proofs; propositional logic, propositional equivalences, predicates and quantifiers. Set theory; set operations, finite and infinite sets. Relations and functions; properties of binary relations, equivalence relations, partial orderings, chains and antichains. Counting; the pigeonhole principle, permutations and combinations, generating functions. Computability; languages and grammars, finite-state machines, language recognition. Graphs; planar, weighted and directed graphs, trails, paths and circuits, Euler paths and circuits, Hamilton paths and circuits, the travelling salesman problem. Trees; spanning and binary trees, algorithms for trees and graphs. Algorithms; complexity of algorithms, properties of integer numbers, primes and greatest common divisors, mathematical induction and recursion, discrete arithmetic functions.

**Human-Computer Interaction (2CI02):** Introduction to Human-Computer Interaction (HCI), definitions, historic overview, interaction techniques. Cognitive references, optical perception, cognitive models (model human processor, Norman's user-system interaction model, distributed models), knowledge representation and mental models. Principles of interactive system design, the three pillars of design, design outlines, icon design. Design evaluation, selection criteria of evaluation techniques, styles of evaluation (laboratory study, field study), technical evaluation of system design (Cognitive walkthrough, heuristic evaluation, review-based evaluation, model-based evaluation). Implementation evaluation, evaluation techniques of an implemented system, empirical methods (experimental evaluation, observation techniques, query techniques). Goals-Operations-Methods-Selection rules (GOMS) model family, evaluation based on GOMS models, GOMS and related models, applied analysis of GOMS on design. Keystroke-Level Model (KLM), Card, Moran & Newell GOMS (CMN-GOMS), Natural GOMS Language (NGOMSL), Cognitive Perceptual Motor GOMS (CPM-GOMS). Web design. Electronic commerce system design. Design for all, design for people with special needs.

**Fractal and Computational Geometry (2CI02):** Fractal sets and their geometry: Similarity, dimensions, dynamic system, iterated function system, complex analytic dynamics, Julia sets and the Mandelbrot set, computational methods for their construction and graphical representation in two- and three-dimensions. Design and analysis of geometric data processing algorithms: Geometric spaces and algebraic point representation, lines, curves, planes, surfaces, etc. geometric

duality, space subdivisions and surface arrangements, the Zone theorem and its applications, Davenport – Schinzel sequences, applications, convex hull of points and algorithms for finding it, Voronoi diagrams and Delaunay triangulations, ways of computing them, proximity problem solutions, point and arrangement triangulations, applications, range searching techniques: subdivision trees, techniques based on random samples such as  $\varepsilon$  – net and  $\varepsilon$  – approximation, parametric searching, applications in robotics, computer vision, graphic and artificial design.

**Computer Graphics (5CI02):** Introduction to Computer Graphics (CG), CG pipeline and hardware. Rasterisation algorithms of line segments, circles and conic sections, antialiasing techniques, polygon filling algorithms, 2D line and polygon clipping algorithms. 2D and 3D coordinate systems and transformations, composite transformations, homogeneous coordinates, projections and viewing transformations. Model representation and simplification. Parametric curves and surfaces, Bézier and spline surfaces, surface representation and deformation, application to anatomical models. Colour models, halftone and dithering, illumination and shading models. Visualisation of 3D data, surface and volume rendering, applications in biomedical data, Digital Reconstructed Radiograph (DRR) from CT data, surface triangulation algorithms, 3D surface reconstruction, marching cubes algorithm for rendering medical data. Elastic transformations, geometric deformation of images in 2D and 3D with application in spatial cross-modal image registration e.g. CT - Single-photon emission CT (SPECT), in radiotherapy design and surgery simulations, construction of 3D anatomical shape atlases, information fusion from different imaging systems.

#### **Postgraduate courses**

##### **National and Kapodistrian University of Athens, Department of Informatics**

**Graphics-Fractals (ΠΜΣ505):** Basic concepts, algorithms for line, circle and ellipse rasterisation, transformation matrices on the plane, clipping algorithms: of points, lines and surfaces on the plane, polygonal surface sweeping algorithms (scan conversion), transformation matrices on the three-dimensional space, space mappings on the plane: central and parallel projections, curve representation:  $n$ -th degree Bézier curves, cubic interpolation, B-spline curves, data structures and algorithms in geometry: tree-like, lattice structures, fractal sets and their visualisation: basic mathematical concepts, iterated function systems (IFS), Julia and Mandelbrot sets, two and three-dimensional representation of them. Co-teaching with Professor Theoch. Theocharis during the spring semester of academic years 1997–1998, 1998–1999 and, at the rank of Lecturer under PD 407/80, in 1999–2000.

##### **National and Kapodistrian University of Athens, Department of Informatics & Telecommunications**

**Graphics, Visualisation, Fractals (ΠΜΣ505):** polygonal model stages: transformation, clipping, projections, lighting, antialiasing, texture performance. Other models. Ray-tracing algorithm: basic algorithm, ray / object intersection, bounding volumes, partition space. Advanced models and lighting algorithms. Animation): creating methodologies, interpolation techniques, character movement principles, transformation (morphing). Visualisation: visualization of vector and scalar fields, visualization of volumetric data. Fractal sets and their visualization: basic mathematical concepts, iterated function systems (IFS), Julia and Mandelbrot sets, two-dimensional and three-dimensional representations. Co-teaching with Lecturer Nicolaos Platis Informatics and Telecommunications, University of Athens during the spring semester of the academic years 2004–2005 and 2005–2006. Co-teaching with Professor Theoch. Theocharis during the spring semester of academic years 2000–2004, at the rank of Lecturer under PD 407/80, and in the winter semester of the academic years 2006–2007 and 2007–2008.

**Graphics and Visualisation (M102):** polygonal model stages briefly: transformations and coordinate systems, standard, projections, lighting and colour models, antialiasing, design algorithms. Selection from the following topics: object representation models and their simplification. Algorithms ray monitoring. Advanced models and lighting algorithms. texture generation algorithm. Synthetic movement. Algorithms shadows. Principles and visualization algorithms. Visualization of vector and scalar data. Co-teaching with Professor Theoch. Theocharis during the fall semester of academic years 2015–2016 and 2016–2017.

**Chaos and Dynamic Systems (ΠΜΣ545):** Fractal interpolation functions and surfaces, fractal dimensions, fractals and multifractals, nonlinear dynamic systems and chaotic behaviour, stable and unstable points, Hamiltonian systems, period doubling sequences and universality, Liapunov exponents, renormalisation, intermittency, strange attractors, invariable curves, bifurcation and normal forms, invariant hyperbolic sets and symbolic dynamics, Chaos theory, Birkhoff and Moser theorems, applications through Mathematica, Matlab and Visual programming languages. Teaching at the rank of Lecturer under PD 407/80 during the fall semester of academic years 2001–2002, 2002–2003 and 2004–2005.

#### **Technological Educational Institution of Athens, Department of Informatics**

**Rendu en synthèse d'images:** Texture synthesis, Regular and stochastic sampling, Aliasing and antialiasing, Models of colours, Ray-tracing and extensions, Beam tracing, Image-based rendering, Real-time rendering, Physical models, Ageing of materials, Participating media, Interactions light-materials. The course belongs to the "Master in Informatics" (Informatics, Image synthesis and Graphic Design) with direction "Multimedia & internet engineering, image synthesis, computer graphics design" and specialized in "Informatics and Information and Communication Sciences." Teaching as Research Associate (Assistant Professor) during the fall semester of the academic years 2008–2009, 2009–2010, 2010–2011, 2011–2012 and 2012–2013.

**Modélisation et animation:** Topology-based geometric modeling, Modelling by clouds of points, Systems of particles, Differential geometry, Principal methods of animation, Dynamic simulation, Simulation of growth, Free-form deformations, Animation of deformable objects, Mass-spring system, Physical based animation, Mathematical techniques used in animation. The course belongs to the "Master in Informatics" (Informatics, Image synthesis and Graphic Design) with direction "Multimedia & internet engineering, image synthesis, computer graphics design" and specialized in "Informatics and Information and Communication Sciences." Teaching as Research Associate (Assistant Professor) during the fall semester of the academic year 2012–2013.

#### **University of Thessaly, Department of Computer Science and Biomedical Informatics**

**Open and distant education, teletraining and adult education:** The ideal of open learning, distance learning, distance learning at the service of open education, educational relations between teachers and students in distance learning, open and distance education with educational and social institutions as well as basic functions of the , distance learning and the points it characterizes, the removal of space from time, educational techniques in open and distance education, design and development of education Mon printed and electronic material with a basic principle the interaction of learners and the learning material, the learner- trainer interaction and the quality of the educational relationship. Advanced Learning Material and Distance Learning Technologies, Content Management System, Learning Management System and mixed LCMS systems, asynchronous teletext education platforms (Moodle, Claroline, Open eClass). The concept of changing education, the scientific field of adult education, the theoretical approaches to adult education and their founders, the characteristics of adult learners, adult education training techniques, modern approaches to adult education, evaluation of adult education programs, definitions, needs and particularities of adult education, characteristics and basic principles of adult education, adult learner and adult learning, reflective, non-reflective, non-learning. Some theoretical approaches, open and distance

learning in adult education through cutting-edge technology (digital technology) to achieve the objectives of adult education. Teaching as Assistant Professor during the spring semester of the academic years 2016-2017 and 2017-2018.

**Human-Computer Interaction in educational act and virtual learning environments:** Introduction to Human-Computer Interaction (HCI), definitions, historic overview, interaction techniques. Cognitive references, optical perception, cognitive models (model human processor, Norman's user-system interaction model, distributed models), knowledge representation and mental models. Principles of interactive system design, the three pillars of design, design outlines, icon design. Design evaluation, selection criteria of evaluation techniques, styles of evaluation (laboratory study, field study), technical evaluation of system design (Cognitive walkthrough, heuristic evaluation, review-based evaluation, model-based evaluation). Implementation evaluation, evaluation techniques of an implemented system, empirical methods (experimental evaluation, observation techniques, query techniques). Goals-Operations-Methods-Selection rules (GOMS) model family, evaluation based on GOMS models, GOMS and related models, applied analysis of GOMS on design. Keystroke-Level Model (KLM), Card, Moran & Newell GOMS (CMN-GOMS), Natural GOMS Language (NGOMSL), Cognitive Perceptual Motor GOMS (CPM-GOMS). Web design. Electronic commerce system design. Design for all, design for people with special needs.

**Didactics of Informatics and Natural Sciences:** Circle of learning. Didactic transposition. Conceptual change. Teaching triangle. Mental models. Cognitive conflict. Constructivism-Constructivism (pre-existing student ideas and where the learner constructs knowledge). Didactic methods. Organizing a course. Expected results. Educational techniques. Pedagogical design of teaching. The contribution of the teacher. Informatics as a subject. How to integrate Information Technology into Education. Teaching Informatics as a subject in Greece. Curricula, lessons, educational material, school workshops. Basic Teaching Concepts. Theories of science teaching. The nature and peculiarities of natural sciences. Principles of teaching science. The natural sciences in the Greek school. Interpretation of the difficulties and the wrong approaches in relation to the teaching conditions and the epistemological obstacles to scientific development. Genesis, formation and evolution of scientific questions, methods of observation and measurement of experimental or intellectual investigation, evidence, documentation and critical acceptance of speculation and research results. Co-teaching, with Prof. Dion. Vavougiou, as Assistant Professor during the winter semester of the academic year 2017-2018.

## SECONDARY EDUCATION

### TEL

- Data processing
- COBOL programming language

### General Senior High School

- Application development in a programming environment (Γ'')
- Multimedia - Networks (Γ')
- Software applications (Γ'')
- Informatics applications (A')
- Computer applications (B', Γ')
- Communication technology (B')
- Projects (A')

### High School

- Informatics - Technology (A', B')
- Informatics (Γ')

Teaching Informatics lessons in the 3rd Primary School of Kifissia (E', ΣΤ').



## OTHER EDUCATION

EA-E08: Quantitative methods and decision support: A MODULE: Introduction to Statistics and Statistical Inference: Descriptive Statistics, data analysis techniques using descriptive statistical methods Descriptive statistical measures, data presentations with the help of tables and diagrams Introduction to regression analysis, multivariate regression analysis, correlation between quantitative variables, parametric linear correlation coefficient, non-parametric linear correlation coefficients, Definition and investigate causal relationships using linear regression models. SECTION B: Content and Methodology of Operational Research, The meaning of Resolution, Data-decision problem Modeling, Decision Making with any unknown probability Decision making by decision-makers groups (Group Decision Making), Familiarity with the basic techniques of decision- making environments in groups (group decision making), Introduction to decision making systems (decision Support systems), Analysis of the purpose of decision Support systems, Characteristics of DSS, Presentation of a simple decision support system, the Games, Negotiations. E.S.D.D.A., special phase of study, first cycle specialization courses, Axis 4: eGovernment supporting technologies, in April 2013.

## INVITED SEMINARS

- “Introduction to fractals and dynamic systems”, together with Dalla Leoni and Böhm A. Series of three lectures, which were held in March 1994 at the Department of Informatics of the University of Athens.
- “Computer Graphics and Fractal sets: Two powerful tools for the visualisation and examination of problems of Chaotic Dynamics and Numerical Analysis”, which was held in October 1999 at the Department of Informatics of the University of Ioannina.
- “Fractal sets and their applications in Numerical Analysis”, which was held in March 2000 at the Department of Physics of the University of Athens.
- “Fractal interpolation functions”, which was held in January 2001 at the Academy of Sciences in Athens.
- “Stochastic algorithms of image decoding”, which was held in September 2002 at the Department of Informatics of the Athens University of Economics & Business.
- “Image compression using affine fractal interpolation functions”, which was held in February 2004 at the Department of Informatics & Telecommunications of the University of Athens.
- “Stochastic algorithms of fractal image decoding”, which was held in January 2005 at the Department of Physics of the University of Athens.

## STUDENTS SUPERVISED

### MONITORING DISSERTATION AND THESIS

- *Basins of attractions and Julia sets of Schröder and König iteration functions* of the student of the Department of Informatics of the University of Athens, N. Argyropoulos, who ended his dissertation on November 1994.
- *Fractal interpolation functions* of the graduate student of the Department of Informatics of the University of Athens, Ap. Tziouvaras, who ended his Master Thesis on December 1996.

### SUPERVISION OF DISSERTATIONS

- *Development of methods for the graphical representation of fractal attractors* of the student of the Department of Informatics of the University of Athens, Eur. Vrahnos, who ended his

- dissertation on September 1999.
- *Graphics representation of Julia and Mandelbrot-like sets in the quaternionic space* of the student of the Department of Informatics of the University of Athens, Pol. Manousopoulos, who ended his dissertation on September 1999.
  - *Fractals and chaotic behaviour I* of the undergraduate student of the Department of Informatics of the University of Athens, Abou-Mrad Emile, who ended his dissertation on September 2000.
  - *Fractal interpolation surfaces* of the undergraduate student of the Department of Informatics of the University of Athens, Ath. Kakargias, who ended his dissertation on September 2001.
  - Δημ. Π. Σγούρδος, *Parameter identification of 2D fractal interpolation functions using bounding volumes*, πτυχιακή εργασία, Τμήμα Πληροφορικής και Τηλεπικοινωνιών, Ε.Κ.Π.Α., Σεπτέμβριος 2012.
  - Sean P. Dillon, *Construction of bivariate fractal interpolation surfaces on convex lattices using iterated function systems*, πτυχιακή εργασία, Τμήμα Πληροφορικής και Τηλεπικοινωνιών, Ε.Κ.Π.Α., Ιούλιος 2016.
  - Spyridon-Panagiotis Kontolatis, *Methods and techniques of image coding and compression based on fractals*, πτυχιακή εργασία, Τμήμα Πληροφορικής και Τηλεπικοινωνιών, Ε.Κ.Π.Α., Οκτώβριος 2016.

#### SUPERVISION OF MASTER THESES

- *Parallel implementation and representation of Mandelbrot and Julia sets* of the graduate student of the Department of Informatics of the University of Athens, Niki Mimikou, who ended her Master Thesis on January 2001.
- *L-systems: Computer graphics visualisation* of the graduate student of the Department of Informatics of the University of Athens, Eleni Kontouli, who ended her Master Thesis on November 2001.
- *Image compression using fractal interpolation functions* of the graduate student of the Department of Informatics & Telecommunications of the University of Athens, Pant. Bouboulis, who ended his Master Thesis on January 2002.
- *Active shape models in the analysis of medical images* of the graduate student of the Department of Informatics & Telecommunications of the University of Athens, Const. Goudanas, who ended his Master Thesis on October 2003.

#### MONITORING PhD THESES

- Pant. Bouboulis, *Fractal interpolation surfaces: Theory and applications in image compression*, Department of Informatics & Telecommunications, National and Kapodistrian University of Athens, December 2002 – January 2006.
- Pol. Manousopoulos, *Parameter identification and algorithmic construction of fractal interpolation functions: Applications in digital imaging and visualisation*, Department of Informatics & Telecommunications, National and Kapodistrian University of Athens, December 2005 – January 2010.

#### SUPERVISION OF PhD THESES

- Nausicaa Tegousi, *Information and technological literacy on the implementation of ICT in the primary and secondary education*, Department of Computer Science and Biomedical Informatics, University of Thessaly, November 2016 – today.

#### CO-SUPERVISION OF PHD THESES

- Maria Nastakou, *Πληροφοριακός και τεχνολογικός εγγραμματισμός κατά την εφαρμογή της Τ.Π.Ε. στην πρωτοβάθμια και την δευτεροβάθμια εκπαίδευση*, Department of Informatics & Telecommunications, University of Peloponnese, December 2016 – today.

#### EXPERIENCE

1992–1993 During my military service I was a member of a team the aim of which was to study and investigate *Game Theory* techniques (Simulation, Expert & Advisory Systems, Planning models, Nondeterministic Models) that can be applied in the specific area of *War Games*. As part of the task, we had to come across and get familiar (from the S/W point of view) with existing simulation techniques and models developed by other countries and to investigate which one of these is best applicable to greek reality.

#### MOBILITY PROGRAMMES

- Participation in European Community Arion action, part of Socrates Programme, from 10/12/2000 – 12/17/2000, Cologne, Germany.
- Participation in the action “Study visits of education” Lifelong Learning programme / Study Visits from 19/05/2008 – 24/05/2008, Stsesinek, Poland.
- Participation in Teacher Mobility Action Teaching abroad program Lifelong Learning ERASMUS from 15/04/2011 - 22/04/2011, Zilina, Slovakia.
- Participation in the two-year program of lifelong learning Comenius, Comenius Regio Partnership entitled Planning, Training, Teaching: GO !!!, First visit from 10/29/2012 - 11/02/2012 in Murcia, Spain.
- Participation in action “study visits” the Lifelong Learning Programme from 05/19/2014 - 22/05/2014, Leroum, Sweden.

#### RESEARCH ACTIVITY

##### PUBLICATIONS IN REFEREED JOURNAL PAPERS

1. Drakopoulos V., *On the additional fixed points of Schröder iteration functions associated with a one-parameter family of cubic polynomials*, Computers & Graphics **22** (1998), 629–634.
2. Dalla Leoni and Drakopoulos V., *On the parameter identification problem in the plane and the Polar Fractal Interpolation Functions*, Journal of Approximation Theory, **101** (1999), 289–302.
3. Drakopoulos V., *How is the dynamics of König iteration functions affected by their additional fixed points?*, Fractals **7** (1999), 327–334.
4. Drakopoulos V., Argyropoulos N. and Böhm A. *Generalized computation of Schröder iteration functions to motivate families of Julia and Mandelbrot-like sets*, SIAM Journal on Numerical Analysis **36** (1999), 417–435.
5. Drakopoulos V., *Schröder iteration functions associated with a one-parameter family of biquadratic polynomials*, Chaos, Solitons & Fractals **13** (2002), 233–243.
6. Drakopoulos V., *Comparing rendering methods for Julia sets*, Journal of WSCG **10** (2002), 155–161.
7. Drakopoulos V., Kakos A. and Nikolaou N., *A probabilistic power domain algorithm for fractal image decoding*, Stochastics & Dynamics **2** (2002), 161–173.
8. Drakopoulos V., *Informatikbildung an den griechischen Schulen*, Erziehung & Unterricht 1-2 (2002), 91–98 (invited).
9. Drakopoulos V., Mimikou Niki and Theoharis T., *An overview of parallel visualisation methods for Mandelbrot and Julia sets*, Computers & Graphics **27** (2003), 635–646.
10. Drakopoulos V., *Are there any Julia sets for the Laguerre iteration function?*, Computers & Mathematics with Applications **46** (2003), 1201–1210.
11. Dalla Leoni, Drakopoulos V. and Prodromou Maria, *On the box dimension for a class of nonaffine fractal interpolation functions*, Analysis in Theory and Applications **19** (2003), 220–233.

12. Drakopoulos V. and Nikolaou N., *Efficient computation of the Hutchinson metric between digitised images*, IEEE Trans. Image Processing **13** (2004), 1581–1588.
13. Bouboulis P., Dalla Leoni and Drakopoulos V., *Image compression using recurrent bivariate fractal interpolation surfaces*, International Journal of Bifurcation and Chaos **16** (7) (2006), 2063–2071.
14. Bouboulis P., Dalla Leoni and Drakopoulos V., *Construction of recurrent bivariate fractal interpolation surfaces and computation of their box-counting dimension*, Journal of Approximation Theory **141** (2006), 99–117.
15. Drakopoulos V., Bouboulis P. and Theodoridis S., *Image compression using affine fractal interpolation on rectangular lattices*, Fractals **14** (4) (2006), 259–269.
16. Drakopoulos V. and Nikolaou N., *On the computation of the Hausdorff metric between digitised images in three dimensions*, Applied Mathematical Sciences, **1** (2007), 145–164.
17. Manousopoulos P., Drakopoulos V. and Theoharis T., *Curve fitting by fractal interpolation*, Transactions on Computational Science I (2008), LNCS 4750, pp. 85–103.
18. Manousopoulos P., Drakopoulos V. and Theoharis T., *Parameter identification of 1D fractal interpolation functions using bounding volumes*, Journal of Computational and Applied Mathematics **233** (4) (2009), 1063–1082.
19. Drakopoulos V., *Sequential visualisation methods for the Mandelbrot set*, Journal of Computational Methods in Sciences and Engineering **10** (1–2)(2010), 37–45.
20. Manousopoulos P., Drakopoulos V. and Theoharis T., *Parameter identification of 1D recurrent fractal interpolation functions with applications to imaging and signal processing*, Journal of Mathematical Imaging and Vision **40** (2) (2011), 162–170.
21. Drakopoulos V. and Manousopoulos P., *Bivariate fractal interpolation surfaces: Theory and applications*, International Journal of Bifurcation and Chaos **22** (9) (2012), 1250220 [8 pages].
22. Alexopoulos C. and Drakopoulos V., *On the computation of the Kantorovich distance for images*, Chaotic Modeling and Simulation **2** (2012), 345–354.
23. Drakopoulos V. and Manousopoulos P., *Height field representation and compression using fractal interpolation surfaces on rectangular domains*, Chaotic Modeling and Simulation **4** (2012), 593–600.
24. Drakopoulos V., *Fractal-based image encoding and compression techniques*, Commun. – Scientific Letters of the University of Zilina **15** (3) (2013), 48–55.
25. Matthes D. and Drakopoulos V., *A simple and fast line-clipping method as a scratch extension for computer graphics education*, Computer Science and Information Technology **7** (2) (2019), 40–47.
26. Matthes D. and Drakopoulos V., *Another simple but faster method for 2D line clipping*, International Journal of Computer Graphics & Animation, **9** (1/2/3) (2019), 1–15.
27. Tegousi Nafsika and Drakopoulos V., *Information literacy in primary education: Implementing an ICT research project in the fifth grade of elementary school*, Journal of Modern Education Review, 2020 (accepted).
28. Drakopoulos V. and Manousopoulos P., *On non–tensor product bivariate fractal interpolation surfaces on rectangular grids*, Mathematics, **8** (4) (2020) (Special Issue “Fractals: Geometry, Analysis and Mathematical Physics”).
29. Drakopoulos V. and Sioulas P.-V., *Augmented Reality at students with special educational disabilities*, Journal of Modern Education Review, 2020 (accepted).
30. Drakopoulos V. and Sioulas P.-V., *Teaching Recursion to Junior-High School Students by using fractals: a complete lesson plan in python*, American Journal of Education and Information Technology (AJEIT), (accepted).

PAPERS SUBMITTED OR IN PREPARATION Drakopoulos V. and Sgourdos D., *Parameter identification of 2D fractal interpolation functions by using convex hulls*, Computational Geometry (submitted).

Drakopoulos V., DuYong Pak and SongIl Ri, *Generalised univariable fractal interpolation functions*, (submitted to CHAOS 2020).

Drakopoulos V., Kim G. and Ri SongIl, *Generalised fractal interpolation surfaces*, Journal of Fractal Geometry, (submitted).

Drakopoulos V. and Ri SongII, Generalised fractal interpolation functions, *Nonlinear Studies*, (submitted).

Drakopoulos V. and Sioulas P.-V., Enhancing Primary School Teaching through Virtual Reality, (submitted as a book chapter in *Research on e-Learning and ICT in Education*).

Drakopoulos V. and Tegousi N., Fractals in primary education: A documented and didactic scenario for the iteration structure by using a visual programming language, (submitted as a book chapter in *Research on e-Learning and ICT in Education*).

Matthes D. and Drakopoulos V., A very simple algorithm for line clipping against a Convex Polygon, (under preparation).

Nastakou Maria, Drakopoulos V. and Platis N., Fractal Interpolation Function for Seismic Data Reconstruction, *Computers & Geosciences* (submitted).

Vijender Nallapu and Drakopoulos V., Affine fractal interpolation, *FCAA* (submitted).

#### PAPERS AS BOOK CHAPTERS OR IN SCIENTIFIC COLLECTIONS

40. Argyropoulos N., Böhm A. and Drakopoulos V., *Julia and Mandelbrot-like sets for higher order König rational iteration functions*, in Novak M. M. and Dewey T. G. (eds), *Fractal frontiers*, World Scientific, Singapore, 1997, 169-178.
41. Drakopoulos V. and Böhm A., *Basins of attraction and Julia sets of Schröder iteration functions*, in Bountis A. and Pnevmatikos Sp. (eds), *Order and Chaos in Nonlinear Dynamic Systems*, Vol IV, Pnevmatikos, Athens, 1998, 157-163.
42. Drakopoulos V. and Dalla Leoni, *Space-filling curves generated by fractal interpolation functions*, in Iliev O., Kaschiev M., Margenov S., Sendov Bl. and Vassilevski P. (eds), *Recent advances in numerical methods and applications*, World Scientific, Singapore, 1999, 784-792.
43. Drakopoulos V. and Georgiou S., *Visualization on the Riemann sphere of Schröder iteration functions associated and their efficient computation*, in Mastorakis N. E. (ed), *Modern applied mathematics techniques in Circuits, Systems and Control*, World Scientific Engineering Society, New York and Athens, 1999, 131-137.
44. Drakopoulos V., Tziovaras A., Böhm A. and Dalla Leoni, *Fractal interpolation techniques for the generation of space-filling curves*, in Lipitakis E. A. (ed), *Hellenic European Research on Computer Mathematics and its Applications*, LEA, Athens, 1999, 843-850.
45. Drakopoulos V. and Nikolaou N., *Efficient computation of several metrics between digitised monochrome images*, in Bountis A. Hellinas D. and Grispoulakis J. (eds), *Order and Chaos in Nonlinear Dynamic Systems*, Vol VII, Pnevmatikos, Athens, 2002, 259-274.
46. Drakopoulos V., *Comparing sequential visualisation methods for the Mandelbrot set*, in Simos T. E. (ed), *International Conference of Computational Methods in Sciences and Engineering 2003*, 2003, 148-151.
47. Nikolaou N., Kakos A. and Drakopoulos V., *A deterministic power domain algorithm for fractal image decompression*, in Novak M. M. (ed), *Complexity and Fractals in Nature*, World Scientific, Singapore, 2004, 255-265.
48. Manousopoulos P., Drakopoulos V. and Theoharis T., *Fractal Active Shape Models*, in Kropatsch W. G., Kampel M. and Hanbury A. (eds), *Computer Analysis of Images and Patterns*, Springer-Verlag, Berlin and Heidelberg, 2007, 645-652.
49. Manousopoulos P., Drakopoulos V., Theoharis T. and Stavrou P., *Effective representation of 2D and 3D data using fractal interpolation*, in Franz-Erich Wolter, Alexei Sourin (eds), *Cyberworlds 2007 International Conference*, IEEE Computer Society, Los Alamitos, California, 2007, 457-464.
50. Manousopoulos P., Drakopoulos V. and Theoharis T., *Volume data visualization using fractal*

- interpolation surfaces, in Katerina Mania and Eric Reinhard (eds), Eurographics 2008 – Short Papers, The Eurographics Association, Greece, 2008, 287–290.
51. Drakopoulos V. and Manousopoulos P., One dimensional fractal interpolation: Determination of the vertical scaling factors using convex hulls, in Skiadas Christos H., Dimotikalis Ioannis and Skiadas Charilaos (eds), Topics on Chaotic Systems: Selected Papers from CHAOS 2008 International Conference, World Scientific Publishing Co. Pte. Ltd., Singapore, 2009, 104–111.
  52. Dillon S. and Drakopoulos V., On self-affine and self-similar graphs of fractal interpolation functions generated from iterated function systems, in Fernando Brambila (ed), Fractal Analysis: Applications in Health Sciences and Social Sciences, Intech, 2017, 187–205.
  53. Ri SongIl and Drakopoulos V., How are fractal interpolation functions related to several contractions?, in Lyudmila Alexeyeva (ed), Mathematical Theorems, Intech, 2020, (accepted).

#### UNREFEREED JOURNAL PAPERS

54. Dalla Leoni, Drakopoulos V. and Böhm A., *Elements of fractal theory*, Mathematical Gazette **43** (1995), 21–48 (in Greek).
55. Drakopoulos V. and Böhm A., *The geometry of nature in education*, Two-day Workshop in Informatics “Informatics in Secondary Education”, GCS, 1997, 117–124 (in Greek).
56. Drakopoulos V. and Dalla Leoni, *The new dimension of the educational mathematical thinking*, 14th Greek Conference of Mathematical Education, HMS, 1997, 235–242 (in Greek).
57. Dalla Leoni and Drakopoulos V., *Polar fractal interpolation functions*, 7th Greek Conference on Mathematical Analysis, Univ. Cyprus, 1999, 39–45.
58. Drakopoulos V., *How many guards needs a gallery?*, Astrolavos (2006).
59. Δρακόπουλος Β., Η επιστημονική και καλλιτεχνική δημιουργία ως αρωγοί στην εκπαιδευτική διαδικασία, στο Γεώργ. Ε. Λευκαδίτης και Σταματίνα Γ. Μαλικούτη (επ.), «Γεωμετρία: Από την επιστήμη στην εφαρμογή», 2012, Τ.Ε.Ι. Πειραιώς, 597–608.
60. Δρακόπουλος Β., Η συμβολή της Ευρωπαϊκής Ένωσης στην ένταξη και ενσωμάτωση της ψηφιακής τεχνολογίας εντός του ελληνικού συστήματος εκπαίδευσης, στο Κατερίνα Κασσιμάτη και Μαρία Αργυρίου (επ.), Διεθνείς και Ευρωπαϊκές Τάσεις στην Εκπαίδευση: Οι επιρροές τους στο Ελληνικό Εκπαιδευτικό Σύστημα, Τόμος Β, ΑΣΠΑΙΤΕ-ΕΕΜΑΠΕ, 2014, 129–138.
61. Τεγούση Ναυσικά και Δρακόπουλος Β., (2017). Μαθαίνω τον ηλεκτρονικό υπολογιστή προγραμματίζοντάς τον: Μία τεκμηριωμένη και διδακτική σκηνογραφία τελειοφίτων της πρωτοβάθμιας εκπαίδευσης, Στο Πρακτικά Συνεδρίου «Η εκπαίδευση στην εποχή των Τ.Π.Ε. και της καινοτομίας», Αθήνα: Νέος Παιδαγωγός.
62. Δρακόπουλος Β. και Σιούλας Παναγιώτης-Βλάσιος, (2018). Ενσωμάτωση της διδασκαλίας του παράλληλου προγραμματισμού στην δευτεροβάθμια εκπαίδευση, i-Teacher 13, 48–56.

#### THESES, DISSERTATIONS AND OTHER PUBLICATIONS

63. Dimas E. and Drakopoulos V., *Numerical solution of partial differential equations using finite differences method*, Univ. of Athens, 1989 (in Greek).
64. Drakopoulos V., *Introduction to fractals and chaotic dynamics*, M.S. Thesis, Univ. of Athens, 1992 (in Greek).
65. Drakopoulos V., *Dynamics of rational iteration methods and fractal functions: Algorithmic construction and their computer graphical representation*, Ph.D. Thesis, Univ. of Athens, 1998 (in Greek).
66. Δρακόπουλος Β., Μελέτη συνόλων τύπου Julia και Mandelbrot στον τετραδιάστατο χώρο των Quaternions, Μεταδιδακτορική Διατριβή, Τμήμα Πληροφορικής και Τηλεπικοινωνιών, Ε.Κ.Πανεπιστήμιο Αθηνών, 2000.

#### REFEREED CONFERENCE PAPERS

67. Argyropoulos N., Böhm A. and Drakopoulos V., *Julia and Mandelbrot-like sets for higher order König rational iteration functions*, 4th IFIP working conference on Fractals in the Natural and Applied Sciences, Denver Colo., U.S.A, April 8–11, 1997.
68. Drakopoulos V., *Comparing rendering methods for Julia sets*, WSCG'2002 10th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision, Plzen, Feb. 4–8, 2002.
69. Drakopoulos V. and Dalla Leoni, *Space-filling curves generated by fractal interpolation functions*, 4th International Conference on Numerical Methods and Applications, Sofia, Bulgaria, Aug. 19–23, 1998.
70. Drakopoulos V. and Georgiou S., *Visualization on the Riemann sphere of Schröder iteration functions associated and their efficient computation*, 3rd IMACS/IEEE CSCC '99 International Multiconference, Athens, Jul. 4–8, 1999.
71. Drakopoulos V., Tziouvas A., Böhm A. and Dalla Leoni, *Fractal interpolation techniques for the generation of space-filling curves*, 4th Hellenic European Research on Computer Mathematics and its Applications, AUEB, Athens, Sep. 24–26, 1998.
72. Drakopoulos V., *Comparing sequential visualisation methods for the Mandelbrot set*, International Conference of Computational Methods in Sciences and Engineering 2003 (ICCMSE 2003).
73. Nikolaou N., Kakos A. and Drakopoulos V., *A deterministic power domain algorithm for fractal image decompression*, 8th International Multidisciplinary Conference on Complexity and Fractals in Nature, Vancouver, Canada, April 4–7, 2004.
74. Manousopoulos P., Drakopoulos V. and Theoharis T., *Fractal active shape models*, 12th International Conference on Computer Analysis of Images and Patterns (CAIP 2007), August 27–29, Vienna, Austria.
75. Manousopoulos P., Drakopoulos V., Theoharis T. and Stavrou P., *Effective representation of 2D and 3D data using fractal interpolation*, New Advances in Shape Analysis and Geometric Modeling (NASAGEM Workshop of the Cyberworlds 2007), Hannover, Germany, October 24 – 26, 2007.
76. Manousopoulos P., Drakopoulos V. and Theoharis T., *Volume data visualization using fractal interpolation surfaces*, Eurographics '08 Annex to the Conference Proceedings, Crete, Greece, April 14 – 18, 2008.
77. Drakopoulos V. and Manousopoulos P., *One dimensional fractal interpolation: Determination of the vertical scaling factors using convex hulls*, Chaotic Modeling and Simulation International Conference, Chania, Crete, Greece, June 3 – 6, 2008.
78. Drakopoulos V., Manousopoulos P. and Theoharis T., *Point cloud modeling using fractal interpolation*, 2nd Chaotic Modeling and Simulation International Conference, Chania, Crete, Greece, June 1 – 5, 2009.
79. Drakopoulos V. and Manousopoulos P., *Bivariate fractal interpolation surfaces: Theory and applications*, International Conference on Nonlinear Dynamics and Complexity: Theory, Methods and Applications, Thessaloniki, July 12 – 16, 2010.
80. Alexopoulos C. and Drakopoulos V., *On the computation of the Kantorovich distance for images*, 4th Chaotic Modeling and Simulation International Conference, Agios Nikolaos, Crete, Greece, May 31 – June 3, 2011.
81. Drakopoulos V. and Manousopoulos P., *Height field representation and compression using fractal interpolation surfaces*, 5th Chaotic Modeling and Simulation International Conference, Athens, Greece, June 12 – 15, 2012.

#### REFEREED GREEK CONFERENCE PAPERS

82. Τεγούση Ναυσικά και Δρακόπουλος Β., (2017). Διδάσκοντες εφαρμογές της πληροφορικής και αναπτύσσοντες εφαρμογές λογισμικού, Στο Πρακτικά 11ου Πανελληνίου Συνεδρίου Καθηγητών Πληροφορικής «Η Πληροφορική στην Πρωτοβάθμια και Δευτεροβάθμια Εκπαίδευση

- Σύγχρονες διδακτικές προσεγγίσεις». Χαλκίδα: Π.Ε.ΚΑ.Π.
83. Τεγούση Ναυσικά και Δρακόπουλος Β. (2017), Πληροφοριακός εγγραμματισμός στην Πρωτοβάθμια Εκπαίδευση: Υλοποιώντας ένα σχέδιο έρευνας με Τ.Π.Ε. στην Ε' τάξη του Δημοτικού Σχολείου. Τα πρακτικά του συνεδρίου: 9th Conference on Informatics in Education 2017, 261-270, Αθήνα.
  84. Δρακόπουλος Β. και Σιούλας Παναγιώτης-Βλάσιος, (2018). Μία διδακτική προσέγγιση της δυαδικής αναζήτησης. Στο Πρακτικά 12ου Πανελληνίου Συνεδρίου Καθηγητών Πληροφορικής «Η Πληροφορική στην Πρωτοβάθμια και Δευτεροβάθμια Εκπαίδευση – Διδακτικές μεθοδολογίες και τεχνικές». Αθήνα: Π.Ε.ΚΑ.Π.
  85. Δρακόπουλος, Β. και Σιούλας Παναγιώτης-Βλάσιος, (2018). Διδασκαλία της αναδρομικής μεθόδου σε μαθητές γυμνασίου με τη χρήση μορφοκλασμάτων: ένα ολοκληρωμένο σχέδιο μαθήματος, Στο πρακτικά του 10th Conference on Informatics in Education, Η Πληροφορική στην Εκπαίδευση, 98–108.
  86. Δρακόπουλος, Β. και Σιούλας Παναγιώτης-Βλάσιος, (2019). Η μεταλυκειακή επαγγελματική κατάρτιση και εκπαίδευση περί την Πληροφορική στην Ελλάδα. Εκπαίδευση, Δια Βίου Μάθηση, Έρευνα και Τεχνολογική Ανάπτυξη, Καινοτομία και Οικονομία, 2, 367–373.
  87. Δρακόπουλος, Β. και Σιούλας Παναγιώτης-Βλάσιος, (2019). Η επαυξημένη πραγματικότητα σε μαθητές με ειδικές μαθησιακές δυσκολίες, Στο πρακτικά του 11th Conference on Informatics in Education, Η Πληροφορική στην Εκπαίδευση, 328–339.

#### PRESENTATIONS AT CONFERENCES WITH ABSTRACTS

88. Δρακόπουλος Β., Σύνολα Julia και Mandelbrot: Μία αλγοριθμική προσέγγιση, 2ο Πανελλήνιο Συνέδριο/7ο Θερινό Σχολείο Μη Γραμμικής Δυναμικής, Ξάνθη, 25 Ιουλ. – 5 Αυγ. 1994.
89. Αργυρόπουλος Ν., Δρακόπουλος Β. και Μπεμ Αλ., Λεκάνες έλξης και σύνολα Julia των επαναληπτικών συναρτήσεων Schröder, 3ο Πανελλήνιο Συνέδριο/8ο Θερινό Σχολείο Πολυπλοκότητας και Χαοτικής Δυναμικής Μη Γραμμικών Συστημάτων, Ξάνθη, 17 – 28 Ιουλ. 1995.
90. Δρακόπουλος Β. και Μπεμ Αλ., Η γεωμετρία της Φύσης στην εκπαίδευση, Διημερίδα Πληροφορικής «Η Πληροφορική στη Δευτεροβάθμια Εκπαίδευση», Αθήνα, 4 – 5 Απρ. 1997.
91. Δρακόπουλος Β., Αργυρόπουλος Ν. και Μπεμ Αλ., Σύνολα τύπου Julia και Mandelbrot των, ανώτερης τάξης, ρητών επαναληπτικών συναρτήσεων König, 5ο Πανελλήνιο Συνέδριο/10ο Θερινό Σχολείο Πολυπλοκότητας και Χαοτικής Δυναμικής Μη Γραμμικών Συστημάτων, Θεσσαλονίκη, 14 – 25 Ιουλ. 1997.
92. Δρακόπουλος Β. και Ευαγγελάτου-Δάλλα Λεώνη, Η νέα διάσταση της εκπαιδευτικής μαθηματικής σκέψης, 14ο Πανελλήνιο Συνέδριο Μαθηματικής Παιδείας, Μυτιλήνη, 14 – 17 Νοεμ. 1997.
93. Δρακόπουλος Β., Ευαγγελάτου-Δάλλα Λεώνη και Μπεμ Αλ., Καμπύλες γεμίζουσες τον χώρο παραγόμενες από fractal συναρτήσεις παρεμβολής, 6ο Πανελλήνιο Συνέδριο/11ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Πολυπλοκότητα και Χάος, Λειβαδιά, 13 – 25 Ιουλ. 1998.
94. Δρακόπουλος Β., Περί των πρόσθετων σταθερών σημείων των επαναληπτικών συναρτήσεων Schröder εφαρμόζουσες σε μια μονοπαραμετρική οικογένεια κυβικών πολυωνύμων, 6ο Πανελλήνιο Συνέδριο/11ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Πολυπλοκότητα και Χάος, Λειβαδιά, 13 – 25 Ιουλ. 1998.
95. Dalla L. and Drakopoulos V., Polar Fractal Interpolation Functions, 7ο Πανελλήνιο Συνέδριο Μαθηματικής Ανάλυσης, Λευκωσία, 14 – 18 Απρ. 1999.
96. Ευαγγελάτου-Δάλλα Λεώνη και Δρακόπουλος Β., Πολικές μορφοκλασματικές συναρτήσεις παρεμβολής, 7ο Πανελλήνιο Συνέδριο/12ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Χάος και Πολυπλοκότητα, Πάτρα, 14 – 24 Ιουλ. 1999.
97. Δρακόπουλος Β., Πως επηρεάζεται η δυναμική των επαναληπτικών συναρτήσεων König από τα πρόσθετα σταθερά τους σημεία;, 8ο Πανελλήνιο Συνέδριο/13ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Χάος και Πολυπλοκότητα, Χανιά, 17 – 28 Ιουλ. 2000.
98. Δρακόπουλος Β. και Νικολάου Ν., Αποδοτικός υπολογισμός της μετρικής Hausdorff μεταξύ δύο ψηφιοποιημένων εικόνων, 9ο Πανελλήνιο Συνέδριο/14ο Θερινό Σχολείο στη Μη Γραμμική



- Δυναμική: Χάος και Πολυπλοκότητα, Πάτρα, 23 Ιουλ. – 3 Αυγ. 2001.
99. Μπουμπούλης Παντ., Δρακόπουλος Β. και Θεοδωρίδης Σέργ., Συμπύεση εικόνων χρησιμοποιώντας ΣΜΣΠ, 10ο Πανελλήνιο Συνέδριο/15ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Χάος και Πολυπλοκότητα, Πάτρα, 19 – 30 Αυγ. 2002.
  100. Δρακόπουλος Β., Η δυναμική των μεθόδων Newton, Schröder, König και Laguerre, 11ο Πανελλήνιο Συνέδριο/16ο Θερινό Σχολείο στη Μη Γραμμική Δυναμική: Χάος και Πολυπλοκότητα, Χαλκίδα, 14 – 24 Ιουλ. 2003.
  101. Δρακόπουλος Β., Μπουμπούλης Παντ., Δάλλα Λεώνη, Συμπύεση εικόνων χρησιμοποιώντας ανάδρομες διμετάβλητες μορφοκλασματικές συναρτήσεις παρεμβολής, Πάτρα και Αρχαία Ολυμπία, Διεθνές Συνέδριο και 17ο Θερινό Σχολείο: Πολυπλοκότητα στην Επιστήμη και την Κοινωνία, 14 – 26 Ιουλ. 2004.
  102. Ευαγγελάτου-Δάλλα Λεώνη, Δρακόπουλος Β. και Μπουμπούλης Παντ., Κατασκευή fractal επιφανειών παρεμβολής και χρήση αυτών στη συμπύεση εικόνων, 10ο Πανελλήνιο Συνέδριο Μαθηματικής Ανάλυσης, Αθήναι, Πολυτεχνειούπολη Ζωγράφου, 30 Σεπ. – 2 Οκτ. 2004.
  103. Δρακόπουλος Β. και Κόκκινος Χαρ., Ο συγκεκριασμός επιστήμης και τέχνης και η ανάπτυξη ενός νέου πεδίου: Αρχικές επισημάνσεις προς μία τεχνοεπιστήμη, 1ο Διεθνές Διεπιστημονικό Συνέδριο «ΕΠΙΣΤΗΜΗ ΚΑΙ ΤΕΧΝΗ», Αθήναι, Ίδρυμα Ευγενίδου, 16 – 19 Ιουν. 2005.
  104. Δρακόπουλος Β., Θεοδωρίδης Σέργ. και Μπουμπούλης Παντ., Συμπύεση εικόνων χρησιμοποιώντας κηδεστική μορφοκλασματική παρεμβολή επί ορθογωνίων δικτυωμάτων, 14ο Πανελλήνιο Συνέδριο/19ο Θερινό Σχολείο στη Μη Γραμμική Επιστήμη και Πολυπλοκότητα, Θεσσαλονίκη, 10 – 22 Ιουλ. 2006.
  105. Δρακόπουλος Β. και Μανουσόπουλος Πολ., Μορφοκλασματικά πρότυπα ενεργών μορφών, 20ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο στη Μη Γραμμική Επιστήμη και Πολυπλοκότητα, Πάτρα, 19 – 29 Ιουλ. 2007.
  106. Δρακόπουλος Β. και Μανουσόπουλος Πολ., Parameter identification of fractal interpolation functions: An application to Medical Imaging, 21ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο στη Μη Γραμμική Επιστήμη και Πολυπλοκότητα, Αθήνα, 21 Ιουλ. – 2 Αυγ. 2008.
  107. Δρακόπουλος Β., Καραμάνη Αθανασία και Μανουσόπουλος Πολ., Προτυποποίηση και ανάλυση υπερήχων με μεθόδους μορφοκλασματικής παρεμβολής, 1ο Εθνικό Συνέδριο της Ε.Μ.Ε. και της Ε.Ε.Ε.Ε., Αιγάλεω, 24 – 26 Ιουν. 2011.
  108. Δρακόπουλος Β., Η επιστημονική και καλλιτεχνική δημιουργία ως αρωγοί στην εκπαιδευτική διαδικασία, Επιστημονικό Συμπόσιο «Γεωμετρία: Από την επιστήμη στην εφαρμογή», Αιγάλεω, 1 – 2 Ιουν. 2012.
  109. Δρακόπουλος Β., Η συμβολή της Ευρωπαϊκής Ένωσης στην ένταξη και ενσωμάτωση της ψηφιακής τεχνολογίας εντός του ελληνικού συστήματος εκπαίδευσης, 5ο Διεθνές Συνέδριο «Διεθνείς και Ευρωπαϊκές Τάσεις στην Εκπαίδευση: Οι επιρροές τους στο Ελληνικό Εκπαιδευτικό Σύστημα», Εκπαιδευτήρια Λαμπύρη, Μοσχάτο, 26 – 28 Σεπτεμβρίου, 2014.
  110. Δρακόπουλος Β., Η ηλεκτρονική μάθηση και η ηλεκτρονική αδελφοποίηση ως ενέργειες της Ευρωπαϊκής Ένωσης για την ανάδειξη της ελληνικής πολιτικής της εκπαίδευσης στην ψηφιακή τεχνολογία, 1ο Πανελλήνιο Συνέδριο eTwinning «Αξιοποίηση των ΤΠΕ στα συνεργατικά σχολικά προγράμματα», Πάτρα, 14 – 16 Νοεμβρίου, 2014.
  111. Δρακόπουλος Β., Εισαγωγή στη γεωμετρία των μορφοκλασμάτων και του χάους, 23ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο «Δυναμικά Συστήματα και Πολυπλοκότητα», Πανεπιστημιακή Κατασκήνωση Καλάνδρας, Χαλκιδική, 27 Αυγ. – 3 Σεπτ. 2016.
  112. Δρακόπουλος Β., Από την επίδραση της πεταλούδας έως την γεωμετρία των μορφοκλασμάτων, 24ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο «Δυναμικά Συστήματα και Πολυπλοκότητα», Βόλος, Πανεπιστήμιο Θεσσαλίας, 12 – 21 Ιουλ. 2017.
  113. Δρακόπουλος Β., Τεχνικές κωδικοποίησης και συμπύεσης εικόνων βασισμένες επί μορφοκλασμάτων, 25ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο «Δυναμικά Συστήματα και Πολυπλοκότητα», Αθήνα, Δίκτυο Πολύπλοκων Συστημάτων και Εφαρμογών (ΔΙ.Π.Σ.Ε.), Ε.Κ.Ε.Φ.Ε. «Δημόκριτος», 9 – 17 Ιουλ. 2018.
  113. Δρακόπουλος Β., Γνωριμία με τα μορφοκλασματικά σύνολα, 26ο Πανελλήνιο Συνέδριο – Θερινό Σχολείο «Δυναμικά Συστήματα και Πολυπλοκότητα», Αθήνα, Εθνικό Μετσόβιο Πολυτεχνείο, 14 – 20 Ιουλ. 2019.

## WORKSHOPS

114. Gountanas C. and Drakopoulos V., Deformable modelling in Medical Imaging using Active Shape Models, Automatic segmentation of MR Images, Constantinople, 27 June 2003.
115. Τεγούση Ναυσικά και Δρακόπουλος Β. (2017β), Μορφοκλάσματα στην πρωτοβάθμια εκπαίδευση: Μία τεκμηριωμένη και διδακτική σκηνογραφία της εντολής επανάληψης με τη χρήση μίας γλώσσας οπτικού προγραμματισμού, Αφίσσα στα πρακτικά του 24ου Θερινού Σχολείου-Συνεδρίου «Δυναμικά Συστήματα και Πολυπλοκότητα», Βόλος, 12–21 Ιουλίου.
116. Σιούλας Π.-Βλ. και Δρακόπουλος Β., Διδακκαλία της αναδρομικής μεθόδου σε μαθητές γυμνασίου με τη χρήση μορφοκλασμάτων, 25ο Πανελλήνιο Συνέδριο/Θερινό Σχολείο «Δυναμικά Συστήματα και Πολυπλοκότητα», Αθήνα, Δίκτυο Πολύπλοκων Συστημάτων και Εφαρμογών (ΔΙ.Π.Σ.Ε.), Ε.Κ.Ε.Φ.Ε. «Δημόκριτος», 9 – 17 Ιουλ. 2018.

## GRANTS

- 1993–1995 “Fractals and Dynamic Systems”, supported by the Special Research Committee of the University of Athens, # 70/4/1388.
- 1996–1997 “Mandelbrot-like sets of König iteration functions”, supported by the Special Research Committee of the University of Athens, # 70/4/2403.
- 1997–1998 “Fractal interpolation functions”, supported by the Special Research Committee of the University of Athens, # 70/4/3247.
- 1998–1999 “Fractal interpolation surfaces”, supported by the Special Research Committee of the University of Athens, # 70/4/4160.
- 1999–2001 “Fractals in the four-dimensional space of quaternions”, supported by the Special Research Committee of the University of Athens, # 70/4/4160.
- 2001–2003 “Fractals and Chaotic behaviour”, supported by the Special Research Committee of the University of Athens, # 70/4/5626.
- 2003–2004 “Image compression using affine fractal interpolation functions”, supported by the Special Research Committee of the University of Athens, # 70/4/5626.
- 2005– “Image compression using bivariate fractal interpolation functions”, supported by the Special Research Committee of the University of Athens, # 70/4/5626.
- 2007–2008 “Fractal interpolation functions using hidden variable”, supported by the Special Research Committee of the University of Athens, # 70/4/5626.

Συμμετοχή στο διετούς διαρκείας Έργο Διακρατικής Συνεργασίας Πρότυπα παραμορφούμενων επιφανειών: Εφαρμογές στον καρδιακό εικονισμό μαγνητικού συντονισμού, το οποίο χρηματοδοτείται από το Γ' Κοινοτικό Πλαίσιο Στήριξης και την Γ.Γ.Ε.Τ. του Υπουργείου Ανάπτυξης. (Επιχειρησιακό Πρόγραμμα «Ανταγωνιστικότητα» Ε.Π.ΑΝ Μέτρο 4.3., Δράση 4.3.6.1) Ε.Υ.: Αναστ. Μπεζεριάνος, Καθ. Πανεπιστημίου Πατρών.

Συμμετοχή στο τριετούς διαρκείας Έργο Προηγμένες Μέθοδοι Οπτικής Υπολογιστικής στην Πολιτισμική Κληρονομιά (Θεματικός Τομέας: Τεχνολογίες πληροφορίας και επικοινωνίας), Π.Ε.Ν.Ε.Δ. 03 Μέτρο 8.3., Δράση 8.3.1 με κωδικό έργου 03 ΕΔ 036 (70/3/8405). Ε.Υ.: Μιχ. Στρίντζης, Καθ. Α.Π.Θ.

Συμμετοχή στο τριετούς διαρκείας Έργο Γνωσιακή Αναζήτηση και Ανάκτηση 3D Γραφικών Μοντέλων (Θεματικός Τομέας: Τεχνολογίες πληροφορίας και επικοινωνίας), Π.Ε.Ν.Ε.Δ. 03 Μέτρο 8.3., Δράση 8.3.1 με κωδικό έργου 03 ΕΔ 520 (70/3/8419). Ε.Υ.: Στ. Περαντώνης Ερευνητής Α', Ε.Κ.Ε.Φ.Ε. Δημόκριτος.

MEMBERSHIPS Hellenic Mathematical Society  
Hellenic Statistical Institute  
Greek Computer Society  
American Mathematical Society  
Society for Industrial and Applied Mathematics

LANGUAGES English  
German

SOCIAL ACTIVITIES Δείγμα της εργασίας μας με την Δάλλα Λεώνη και τον Μπεμ Αλ., παρουσιάστηκε σε έκθεση ζωγραφικής με θέμα «Fractal Art» της εικαστικού Μάγιας-Μαρίας Ρεμούνδη στον Χώρο Τέχνης “Θέμα”, Αθήνα, 30 Μαΐ. – 24 Ιουν. 1995.

Δείγμα της εργασίας μας με τον Μπεμ Αλ., παρουσιάστηκε σε έκθεση ζωγραφικής της ζωγράφου Μάγιας-Μαρίας Ρεμούνδη με θέμα «Φύση: Γεωμετρία και Πολυπλοκότητα» στο Χώρο Τέχνης “ΖΜ”, Θεσσαλονίκη, 28 Μαρτ. – 12 Απρ. 1997.

REVIEWER OR REFEREE

#### JOURNALS

1. ACM Transactions on Mathematical Software (<http://www.acm.org/toms/>).
2. Acta Applicandae Mathematicae (<http://www.springer.com/mathematics/journal/10440>).
3. ANZIAM Journal (<http://anziamj.austms.org.au/>).
4. Applied Mathematical Modelling (<http://www.journals.elsevier.com/applied-mathematical-modelling/>).
5. Applied Mathematics and Computation (<http://www.journals.elsevier.com/applied-mathematics-and-computation/>).
6. Applied Mathematics Letters (<http://www.journals.elsevier.com/applied-mathematics-letters/>).
7. Astrophysics and Space Science (<http://www.springer.com/astronomy/astrophysics+and+astroparticles/journal/10509>).
8. Chaos, Solitons & Fractals (<http://www.journals.elsevier.com/chaos-solitons-and-fractals/>).
9. Computers & Graphics (<http://www.journals.elsevier.com/computers-and-graphics/>).
10. Fractals (<http://www.worldscinet.com/fractals/>).
11. Fractional Calculus and Applied Analysis (<https://www.degruyter.com/view/j/fca>)
12. IEEE Transactions on Image Processing (<http://www.signalprocessingsociety.org/publications/periodicals/image-processing/>).
13. IEEE Transactions on Circuits and Systems for Video Technology (<http://tcsvt.polito.it/>).
14. Institution of Engineering and Technology Image Processing (<http://www.ietdl.org/IET-IPR>).
15. International Journal of Bifurcation and Chaos (<http://www.worldscinet.com/ijbc/ijbc.shtml>).
16. International Journal of Computational Mathematics (<http://www.hindawi.com/journals/ijcm/>)
17. International Journal of Computer Mathematics (<http://www.tandf.co.uk/journals/titles/00207160.asp>).
18. International Journal of Educational Innovation (<https://journal.eepek.gr/>).
19. Journal of Approximation Theory (<http://www.journals.elsevier.com/journal-of-approximation-theory/>).
20. Journal of Computational and Applied Mathematics (<http://www.journals.elsevier.com/journal-of-computational-and-applied-mathematics/>)

21. Journal of Mathematical Analysis and Applications (<https://www.journals.elsevier.com/journal-of-mathematical-analysis-and-applications>)
22. Journal of the Franklin Institute (<http://www.journals.elsevier.com/journal-of-the-franklin-institute/>).
23. Mathematical Reviews (<http://www.ams.org/mr-database>).
24. Mathematical methods in the applied sciences (<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-MMA.html>).
25. Mathematical Problems in Engineering (<https://www.hindawi.com/journals/mpe/>)
26. NED University Journal of Research - Applied Sciences (<http://www.neduet.edu.pk/NED-Journal/>).
27. Pattern Recognition (<http://www.journals.elsevier.com/pattern-recognition/>).
28. Results in Mathematics (<https://link.springer.com/journal/25>)
29. The Open Mathematics Journal (<http://www.bentham.org/open/tomatj/>).
30. Vietnam Journal of Mathematics (<http://www.springer.com/mathematics/journal/10013>).

### CONFERENCES AND CONGRESSES

1. International Conferences in Central Europe WSCG'2005 (recently Winter School of Computer Graphics) (<http://wscg.zcu.cz/wscg2005/wscg2005.htm>).
2. Pan-Hellenic Conference of Informatics Teachers (6th, 7th, 8th, 9th)
3. International Conference for the promotion of educational innovation (3rd)

### ADDITIONAL SKILLS - TECHNICAL KNOWLEDGE

- Packages: Matlab, Mathematica, SPSS, Statgraphics; some experience with SAS; extensive use of C and Fortran statistical libraries.
- Languages: Pascal, C++, some experience with MPI parallel processing library.
- Applications: Generic Mapping Tools (GMT) - Unix mapping software, L<sup>A</sup>T<sub>E</sub>X, common Windows database, spreadsheet, and presentation software
- Algorithms: Experience programming Markov Chain Monte Carlo simulations and recurrent IFS, fractal surfaces, ray traced fractals
- Operating Systems: Windows, Unix/Linux.

### HOBBIES

- Participation, as Reserve Aircraftman, in the War Games group of Hellenic National Defence General Staff from 10/5 – 3/11 of 1993.
- Scientific Consultant for the television film by Antonis Kokkinos «Απόδραση;».
- Good knowledge of music and especially piano and guitar.
- Musical assistant of the ΣΤΕΡΕΟ and ΤΑ ΦΙΛΙΑ και οι απανταχού ΦΙΛΙΩΤΕΣ (<http://www.adelfotis-filioton.gr>) magazines.
- Former member of the A.O. Γαλατσίου basketball team and of the university basketball team of the Department of Mathematics.