

Nikolaos Petrakis

Assistant Professor in the Electronic Engineering Department (Chania), School of Engineering, Hellenic Mediterranean University, in the field of "Design, Reliability and Programming of Digital Systems with applications in cryptography and electromagnetic scattering".

Office phone +30 28210 23064, E-mail: nik.s.petrakis@hmu.gr



Taught Postgraduate Courses

- Programming Techniques and Algorithms
(MSc in “Telecommunication & Automation Systems - TeleAutoS”)

Taught Undergraduate Courses

- Digital System Design (3rd Semester)
- Data Structures (3rd Semester)
- Computer Architecture (4th Semester)

Studies

- Ph.D. in Computer Engineering, Technical University of Timisoara – Romania (1995).
- Electrical Engineering Diploma, “Traian Vuia” Polytechnic Institute of Timisoara (1990).

Brief Biography

Nikolaos Petrakis was born in 1967 in Rethymno, Greece. He received the Diploma in Electrical Engineering (1990) from the Polytechnic Institute of Timisoara, and the Ph.D. degree in Reliability and Computer Engineering (1995) from the Technical University of Timisoara, Romania. After the completion of his military service (1997) he worked as a visiting professor at the Electronics Dept. of TEI of Crete and in parallel (1999-2002, 2009-2010) at the Electronics & Computer Engineering Dept. of the Technical University of Crete (TUC).

In March 2003 he was elected to the rank of Lecturer at the Electronics Department of the Technological Educational Institute (TEI) of Crete (which later, in 2019, evolved into Hellenic Mediterranean University). In November 2023, he became an assistant professor.

Over the years he has been teaching courses such as: “Computer Programming”, “Data Structures”, “Programming Techniques & Algorithms”, “Design of Digital Systems”, “Computer Architecture”, etc., to both undergraduate and postgraduate students, as well as, to Erasmus students.

He has participated either as a young researcher or as a principal researcher in Research and Operational-Development Projects in the framework of National Research Programs (e.g. PENED, EPEAEK) as well as in European Programs (e.g. AGME, ATHENA), where alliances of European universities envision the future European university for the benefit of the whole society.

His research interests are in Computer Organization and Design, Computer Arithmetic, Computer Programming, Cryptography, VLSI Design and Test, Fault Tolerance, Design for Testability, Concurrent Checking and Completely Self-Testing Checkers. He has authored or coauthored 5 journal articles and more than 25 research conference papers.

Dr. Eng. Nikolaos Petrakis is an active member of the Institute of Electrical & Electronic Engineers (IEEE), Technical Chamber of Greece and Hellenic Association of Electrical Engineering.

Research Interests

Computer Programming, Computer Organization and Design, Computer Arithmetic, Cryptography, VLSI Design and Test, Fault Tolerance, Design for Testability, Concurrent Checking and Completely Self-Testing Checkers.

Selected Reports & Publications:

- George S. Liodakis, Theodoros N. Kapetanakis, Melina P. Ioannidou, Anargyros T. Baklezos, **Nikolaos S. Petrakis**, Christos D. Nikolopoulos and Ioannis O. Vardiambasis, “*Electromagnetic Wave Scattering by a Multiple Core Model of Composite Cylindrical Wires at Oblique Incidence*”, Appl. Sci. 2022, 12, 10172. <https://doi.org/10.3390/app121910172>, 2022.
- Dariaa Voloshchuk, Antonios J Konstantaras, Alexandra Moshou, Nataliia Kasianova, Irina Skorniakova, Panagiotis Argyrakakis, **Nikolaos S Petrakis**, “*Neural network modeling of seismic behaviour of the hellenic Arc: strengths and limitations*”, International Journal of Advanced Technology and Engineering Exploration, Vol 9(95), ISSN (Print): 2394-5443 ISSN (Online): 2394-7454, <http://dx.doi.org/10.19101/IJATEE.2021.876293>, 2022.
- Alexandra Moshou, Antonios Konstantaras, Panagiotis Argyrakakis, **Nikolaos S. Petrakis**, Theodoros N. Kapetanakis, and Ioannis O. Vardiambasis, “*Data Management and Processing in Seismology: An Application of Big Data Analysis for the Doublet Earthquake of 2021, 03 March, Ellassona, Central Greece*”, Appl. Sci. 2022, 12, 7446. <https://doi.org/10.3390/app12157446>, 2022.
- George S. Liodakis, Melina P. Ioannidou, **Nikolaos S. Petrakis**, Anargyros T. Baklezos, Theodoros N. Kapetanakis, Christos D. Nikolopoulos and Ioannis O. Vardiambasis, “*Effect of Buildings on the Radiation Characteristics of MF Broadcast Antennas*”, Appl. Sci. 2022, 12, 6525. <https://doi.org/10.3390/app12136525>, 2022.
- Antonios Konstantaras, **Nikolaos S. Petrakis**, Theofanis Frantzeskakis, Emmanouil Markoulakis, Katerina Kabassi, Ioannis O. Vardiambasis, Theodoros Kapetanakis, Alexandra Moshou and Emmanuel Maravelakis, “*Deep learning neural network seismic big-data analysis of earthquake correlations in distinct seismic regions*”, International Journal of Advanced Technology and Engineering Exploration, Vol 8(84), ISSN (Print): 2394-5443 ISSN (Online): 2394-7454, <http://dx.doi.org/10.19101/IJATEE.2021.874641>, 2021.
- George Liodakis, Ioannis O. Vardiambasis, **Nikolaos Petrakis** and Ioannis A. Kaliakatsos, “*Laying the Groundwork for Effective Workplace Learning in the ICT Sector*”, *Proceedings of the 7th International Conference on New Horizons in Industry, Business and Education (NHIBE 2011)*, pp. 195-200, 25-26 August 2011, Chios Island, Greece.
- Elias N. Malamas and **Nikolaos Petrakis**, “*A Software Platform for Real-Time Assessment of Ship Maneuverability*”, *Proceedings of the 52nd International Symposium ELMAR (ELMAR-2010)*, Zadar, Croatia, 15-17 September 2010, pp. 379-382.
- G. Sideris, **N. Petrakis** and I. Kaliakatsos, “*A VHDL Implementation of the Advanced Encryption Standard Algorithm*”, International Conference on Telecommunications & Multimedia TEMU2010, Chania, Crete, Greece, 14-16 July 2010.
- Fiolitakis Antonios, **Petrakis Nikolaos**, Margaronis Panagiotis, Antonidakis Emmanouel, "Hardware Implementation of Triple-DES Encryption/ Decryption Algorithm", International Conference on Telecommunications & Multimedia TEMU2006, Heraklion, Crete, Greece, 05-07 July 2006.
- J.P. Makris, I.O. Vardiambasis, **N. Petrakis**, "Studying and Calibrating Thermocouples: A Laboratory Exercise at the Technological Educational Institute of Crete", Proceedings, 2nd Balkan Region Conference on Engineering Education, 16-19 September 2003, Sibiu, Romania, pp. 120-123.
- K.O. Vardiambasis, J.N. Padiaditis, **N. Petrakis**, E. Antonidakis, "Teaching computer programming at the Technological Educational Institute of Crete – A case study: Building a web-based information system for the surveillance of SARS", Proceedings, 2nd Balkan Region Conference on Engineering Education, 16-19 September 2003, Sibiu, Romania, pp. 117-119.
- E. Antonidakis, **N. Petrakis**, I. Kaliakatsos, C. Athanasaki-Michailidou, “*Laboratory Performance in Integrated ODL Environments*”, *ENGINEERING EDUCATION AND RESEARCH – 2002*, iNEER and Begell House Publishers 2003.
- A. Dollas, D. Pnevmatikatos, N. Aslanides, S. Kavvadias, E. Sotiriades, K. Papademetriou, N. Chrysos, K. Harteros, E. Antonidakis, **N. Petrakis**, "Architecture and Applications of PLATO, a Reconfigurable Active

Network Platform", Proceedings, 9th International IEEE Symposium on Field-Programmable Custom Computing Machines, Rohnert Park, CA, April 30 - May 2, 2001, Computer Society Press, pp.101-110.

- M. Vlăduțiu, D. Todinca, **N.S. Petrakis**, I. Brînzăș, "The Principle of a Fuzzy Processor with Parity Check", Buletinul Științific și Tehnic al Universității Tehnice din Timișoara, 1994, Seria Automatică și Calculatoare, Tom 39 (53), pp. 133-139.
- **N.S. Petrakis**, "About Synthesis on Parity Check Adder/Subtractor with Carry-Dependent Result for an Adapted Combinational Array Divider", Buletinul Științific și Tehnic al Universității Tehnice din Timișoara, 1994, Seria Automatică și Calculatoare, Tom 39 (53), pp. 46-54.
- **N.S. Petrakis**, "Applying Parity Check to an Adapted Combinational Array Divider", International Conference on Technical Informatics, PROCEEDINGS Vol. 5, Timișoara 1994, pp. 37-48.

Contact: Dr. Eng. **Nikolaos Petrakis**, Assistant Professor

Address: Electronic Engineering Department
Hellenic Mediterranean University
Romanou 3 (Halepa), 73133 Chania,
GREECE

office tel.: +30 2821 023064

mobile: +30 6944994754

e-mail: nik.s.petrakis@hmu.gr
n.petrakis@computer.org