

Curriculum Vitae: Nikolaos Doukas

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Member of the Technical Chamber of Greece

Other professional associations: AMIEE, SMIEEE, ACGI, DIC

Current Occupation:

- **Hellenic Military Academy: Associate Professor in Information Technology.** Teaching undergraduate and postgraduate courses on Basic IT skills, Computer Programming, Information Security, Simulation.

Teaching Experience:

- **Hellenic Air Force Academy:** Visiting lecturer in Information Technology (Databases, programming in Delphi, Matlab, JavaScript, HTML, Visual Basic). Research in distance learning and e-learning (2004 - 2010).
- **Hellenic Military Academy:** Visiting lecturer in Information Technology (Basic IT skills, Computer Programming, Information Security). (2003 -)
- **TEI Chalkidas:** Visiting Lecturer in Optimal Control, Stochastic Control and Digital Signal Processing. (2004 – 2005).
- **Athens University of Economics and Business:** Visiting Lecturer in Computer Graphics (2001 – 2003).
- **Research Associate, Department of Electrical and Electronic Engineering, Imperial College of Science, Technology and Medicine, London, UK,** with contributions in teaching of Computer Programming and Digital Signal & Image processing (1994 – 1999).
- **First Aid Trainer,** licenced by St. John Ambulance London (1997-).

Previous Employment:

- **LH Logismiki Ltd:** Development of new features in a software package for architectural design and static analysis of concrete and metallic buildings. Collaboration as an external contractor.
- **Athens University of Economics and Business:** Research associate in e-Business projects (under the supervision of Prof D. Spinellis)
- **Eurovend Ltd:** Design and implementation of embedded software and database applications.
- **Athens University of Economics and Business:** Research associate in Computer 2-D and 3-D Graphics projects (under the supervision of Prof D. Spinellis)
- **Ellemedia technologies.** Research and development in the field of broadband communications. Projects: ESPRIT 26298 (BC3) and IST-1999-10731 (ADAMAS). (2001 – 2003).
- **THALES SA (THOMSON CSF DETEXIS),** Development of simulation software (2000 – 2001).
- **SENA S.A.,** Development of CAD software (Αύγ. 1999 – Δεκ. 2000).
- **Hellenic Navy, Centre for Electronic Data Processing, Naval Education Command:** Development of Database applications (1999 – 2000).
- **Research Associate, Department of Electrical and Electronic Engineering, Communications and Signal Processing Section, Imperial College of Science, Technology and Medicine, London, UK.** Working in projects funded by the UK MoD (DERA), LG Semiconductors, MATRA Communications and the EU ESPRIT 6199 (FREETEL) Project. Research in the fields of Telephony, telecommunications and Sonar (1994 - 1999).

Academic Theses:

- **Doctoral Thesis:** Voice Activity Detection Using Energy Based Measures and Source Separation, Imperial College, May 1998.
- **MSc Thesis:** Sampling Rate Conversion Schemes with Applications to Signal Display Systems, Imperial College, November 1993.

Degrees:

- **Doctor of Philosophy, Department of Electrical and Electronic Engineering, Communications and Signal Processing Section,** Imperial College, London 1998
- **Master of Science,** in Communications and Signal Processing, Department of Electrical and Electronic Engineering, Imperial College, London 1993.
- **Bachelor of Engineering,** in Information Systems Engineering Imperial College, London 1992, with First class honours.

Linguistic Skills:

- * English (Fluent, Certificate of Proficiency in English, Univ. of Cambridge),
- * French (Fluent, Diplôme d' Études Supérieures, issued by the French Consulate in Athens),
- * German (Modest, 4 year course in the Goethe Institutin London),
- * Italian (Modest, 2 year course at Imperial College).

Research Interests:

- Cryptography
- Computer Security
- Video processing and security
- Artificial Intelligence
- Neural networks
- Electronic learning and Computer Assisted Assessment.
- Speech Encryption.

Software Development experience:

- High level languages: C, Modula-2, C++, Visual Basic, Delphi, Pascal, Fortran, Miranda, Prolog, Perl, SQL
- Assembly languages: Texas Instruments DSP TMS320C50, Motorola 6809 / DSP 56000.
- Operating systems: UNIX (SunOS, Solaris, LINUX, AIX), DOS, Windows (3.11, 9x, NT).
- Other: Matlab, Mathematica, SOLO / CADENCE, LaTeX.

Patent

- European Patent 2178235 (Application No 08 390 001.9 – 1244). A. Kounoudes, D. Doumenis and N. Doukas (Signargenerix Ltd): “Encryption of information Signals” Communication under rule 71(3) EPC (Intention to grant European Patent) issued on 16/12/2010.

Recent Funded Research Activity

- European project CHAMELEON (<http://www.chameleon-project.com/>). EU funded research project [FP7/2007-2013] under grant agreement number 286510. Research into algorithms and techniques for high definition video surveillance (January 2012 – January 2014). In association with SignalGenerix Ltd, Limassol, Cyprus.

Independent commercial software development activity

- LH Logismiki Ltd (<http://www.lhlogismiki.gr>): Development of a commercial software package for architectural design and static analysis of concrete and metallic buildings. Collaboration as an external contractor. Currently working on a new release for overseas use (1999 -)

Development and teaching of new courses in the Hellenic Army Academy (including slides and notes):

1. 2012 – 2014: Selection course “Simulation and Internet Programming” (3rd year)
2. 2013 – 2014: Decision Support Systems (4th year)
3. 2010 – 2014: Redesign of the “Algorithms and basic programming skills” course (1st year)

Other Teaching in the Hellenic Army Academy

1. 2013 – 2014: Operational resources management (3rd year)

Supervision of final year projects

1. Pantelis Kyriakides, Cryptographic tools for Android Smartphones (Hellenic Army Academy 2012)
2. Ksenofon Karyfyllis, Voice communication cryptography in modern packet switched military networks.. (Hellenic Army Academy 2013)
3. Savvas Theodoulou, True random number generation and applications (Hellenic Air Force Academy 2010)
4. Kwnstantinos Mylwnakis, Serious game design for military training (Hellenic Air Force Academy 2011)
5. Dimitris Adam, Basilis Kavouras, Computer network security – Attack and Defence techniques (Hellenic Army Academy 2013)
6. Dimitris Dirdiris, Cryptography in the Symbian Mobile operating system (Hellenic Air Force Academy 2010)
7. Christos Frountzas, Sensitivity calculations in Geographical Information Systems (Hellenic Air Force Academy 2010)
8. Konstantinos Psychogios, Light source tracking using light sensitive circuits and step motors (Hellenic Army Academy 2014)
9. Alaksandra Ntella, Biometric Iris and fingerprint recognition with applications to identity confirmation (Hellenic Army Academy 2014)
10. A. Stergioulis, S. Stefadouros and J. Tserpes: AES implementations in smartcards and countermeasures against Power analysis Attacks (Hellenic Army Academy 2014)
11. Antonios Korfiatis: Unmanned vehicle control via Android Smartphone (Hellenic Army Academy 2014)
12. S. Skarimpas and A. Rokos: Cybercrime categories and protection techniques (Hellenic Army Academy 2014)
13. F. Karageorgiou and M. Kontopoulou: Digital Signatures and Applications for secure information exchange (Hellenic Army Academy 2014)

Other scientific activities within the Hellenic Army Academy

1. Member of the scientific committee of the Journal of The Hellenic Army Academy
2. Member of the organizing committee of the Hellenic Army Academy conference in Cryptography
3. Member of the organizing committee of the Hellenic Army Academy conference in Mathematics and Applications in Military Science

Administrative activities within the Hellenic Army Academy

1. Director of the Electronics Laboratory
2. Member of staff responsible for the registration of teaching staff contracts (apografi.gov.gr)
3. Member of the internal evaluation committee for the academic program

Selected Publications (Since 2009)

1. Doukas, N. (2017). Technologies for Greener Internet of Things Systems. In Green IT Engineering: Components, Networks and Systems Implementation (pp. 23-42). Springer International Publishing.
2. Bardis, N. G., Markovskyi, O. P., & Doukas, N. (2017). A Method for Strict Remote User Identification Using non-Reversible Galois Field Transformations. In MATEC Web of Conferences (Vol. 125, p. 05017). EDP Sciences
3. Kharchenko, V., Fesenko, H., & Doukas, N. (2017, September). An approach to the drone fleet survivability assessment based on a stochastic continues-time model. In AIP Conference Proceedings (Vol. 1872, No. 1, p. 020025). AIP Publishing.
4. Doukas, N., & Bardis, N. G. (2017, September). Current trends in small vocabulary speech recognition for equipment control. In AIP Conference Proceedings (Vol. 1872, No. 1, p. 020029). AIP Publishing.
5. Dontas, E., Toufexis, F., Bardis, N., & Doukas, N. (2017). Data Acquisition for Environmental and Humanitarian Crisis Management. In Green IT Engineering: Components, Networks and Systems Implementation (pp. 87-107). Springer International Publishing.
6. Bardis, N., Doukas, N., & Markovskyi, O. P. (2017). Synchronization Error Correction for Asynchronous Channels Data Transmission. In ITM Web of Conferences (Vol. 9, p. 03007). EDP Sciences.
7. Bardis, N., Doukas, N., & Markovskyi, O. P. (2016, August). Erasure Code for Efficient Error Correction in Block Data Transmission. In Mathematics and Computers in Sciences and in Industry (MCSI), 2016 Third International Conference on (pp. 296-301). IEEE.
8. Bardis, N., Doukas, N., & Markovskyi, O. P. (2015, October). Effective method to restore data in distributed data storage systems. In Military Communications Conference, MILCOM 2015-2015 IEEE (pp. 1248-1253). IEEE
9. Bardis, N.G.; Doukas, N.; Markovskyi, O.P.; Drigas, A.; "Two level efficient user authentication scheme," Digital Ecosystems and Technologies (DEST), 2010 4th IEEE International Conference on , vol., no., pp.470-474, 13-16 April 2010
10. Bardis, N.G.; Markovskyi, O.; Doukas, N.; "Efficient burst error correction method for application in low frequency channels and data storage units," Digital Signal Processing (DSP), 2011 17th International Conference on , vol., no., pp.1-6, 6-8 July 2011
11. Doukas, Nikolaos, Athanasios Drigas, and Nikolaos G. Bardis. "Design of an Interactive Game for Teaching War Ethics." Technology Enhanced Learning. Quality of Teaching and Educational Reform. Springer Berlin Heidelberg, 2010. 558-564.
12. Bardis, N.G.; Doukas, N.; Markovskyi, O.P.; , "Organization of the polymorphic implementation of Rijndael on microcontrollers and smart cards," Military Communications Conference, 2010 - MILCOM 2010 , vol., no., pp.1783-1787, Oct. 31 2010-Nov. 3 2010
13. Bardis, N.G.; Doukas, N.; Markovskyi, O.P.; , "Burst error correction using binary multiplication without carry," Military Communications Conference, MILCOM 2011 , vol., no., pp.305-309, 7-10 Nov. 2011
14. Stavroulakis, P.; Markovskyi, O.P.; Bardis, N.G.; Doukas, N.; , "Efficient zero — Knowledge identification based on one way Boolean transformations," GLOBECOM Workshops (GC Wkshps), 2011 IEEE , vol., no., pp.275-280, 5-9 Dec. 2011
15. Iracleous, Dimitrios P., Nikolaos G. Bardis, and Nikolaos Doukas. "Consensus algorithms within the C4ISR architecture." Journal of Computations & Modelling 3, no. 4 (2013): 103-114.
16. Bardis, Nikolaos G., Nikolaos Doukas, and Oleksandr P. Markovskyi. "Hash addressing of the quasi-permanent key arrays in multilevel memory.", Journal of Applied Mathematics and Bioinformatics, Vol. 3, Iss. 4, (2013)

17. Doukas, Nikolaos, Nikolaos Bardis, and Oleksandr P. Markovskiy. "Authentication and Integrity in Streaming Video Transmission." *Mathematics and Computers in Science and Engineering Series 12* (2013).
18. Bardis, Nikolaos G., et al. Fast implementation zero knowledge identification schemes using the Galois fields arithmetic "Dept. of Mil. Sci., Univ. Mil. Educ.-Hellenic Army Acad., Vari, Greece." *Telecommunications (BIHTEL), 2012 IX International Symposium on. IEEE, 2012.*
19. Doukas, N., & Bardis, N. G. (2017, September). Current trends in small vocabulary speech recognition for equipment control. In *AIP Conference Proceedings* (Vol. 1872, No. 1, p. 020029). AIP Publishing.
20. N. Bardis, O. P. Markovskiy, N Doukas and N. V. Karadimas. True random number generation based on environmental noise measurements for military applications. *ISPRA'09 Proceedings of the 8th WSEAS international conference on Signal processing, robotics and automation. Pages 68-73 2009.*
21. Bardis, Nikolaos G., Nikolaos Doukas, and Oleksandr P. Markovskiy. "Transmission error correction based on the weighted checksum." *Proceedings of the Applied Computing Conference. 2009.*
22. Bardis, Nikolaos, Nikolaos Doukas, and Oleksandr P. Markovskiy. "Fast subscriber identification based on the zero knowledge principle for multimedia content distribution." *International Journal of Multimedia Intelligence and Security 1.4* (2010): 363-377.
23. Bardis, N.G.; Doukas, N.; Markovskiy, O.P.; Drigas, A.; , "Two level efficient user authentication scheme," *Digital Ecosystems and Technologies (DEST), 2010 4th IEEE International Conference on , vol., no., pp.470-474, 13-16 April 2010*
24. Bardis, Nikolaos G., et al. "Optimised information system reliability techniques for knowledge society acceptance." *International Journal of Knowledge and Learning 5.3* (2009): 207-221.
25. Bardis, N.G.; Markovskiy, O.; Doukas, N.; , "Efficient burst error correction method for application in low frequency channels and data storage units," *Digital Signal Processing (DSP), 2011 17th International Conference on , vol., no., pp.1-6, 6-8 July 2011*
26. Doukas, Nikolaos, Athanasios Drigas, and Nikolaos G. Bardis. "Design of an Interactive Game for Teaching War Ethics." *Technology Enhanced Learning. Quality of Teaching and Educational Reform. Springer Berlin Heidelberg, 2010. 558-564.*
27. Vrettaros, J., Doukas, N., Vouros, G., Drigas, A. S., Argiri, K., & DEMOKRITOS, N. (2010, July). Construction of a Diagnostic System of Deaf Students' Knowledge Level Using Adaptive NeuroFuzzy Inference Systems (ANFIS). In *Proceedings of the 14th WSEAS international conference on Communications* (pp. 49-56). World Scientific and Engineering Academy and Society (WSEAS).
28. Bardis, N.G.; Doukas, N.; Markovskiy, O.P.; , "Organization of the polymorphic implementation of Rijndael on microcontrollers and smart cards," *Military Communications Conference, 2010 - MILCOM 2010 , vol., no., pp.1783-1787, Oct. 31 2010-Nov. 3 2010*
29. Alexandris, G, Karadimas, N. V., Doukas N. "Coverage models in military operations". *CIT'11 Proceedings of the 5th WSEAS international conference on Communications and information technology, Pages 301-306, 2011*
30. Alexandris, G, Karadimas, N. V., Doukas N. "An object oriented approach for the discertization process". *Proceedings of the WSEAS 11th International Conference on Applications of Computer Engineering, pages 225 – 231, 2012.*
31. J. Vrettaros, N. Doukas, G. Vouros, A. Drigas, K. Argyri. Construction of a Diagnostic System of Deaf Students' Knowledge Level Using Adaptive NeuroFuzzy Inference Systems (ANFIS). *ICCOM'10 Proceedings of the 14th WSEAS international conference on Communications, Pages 49-56 (2010)*
32. Bardis, N.G.; Doukas, N.; Markovskiy, O.P.; , "Burst error correction using binary multiplication without carry," *Military Communications Conference, 2011 - MILCOM 2011 , vol., no., pp.305-309, 7-10 Nov. 2011*
33. DOUKAS, NIKOLAOS. "Low Color-Depth Image Encryption Scheme for use in COTS Smartphones." *WSEAS Transaction on Systems 11.9* (2012).
34. Iracleous, Dimitrios P., Nikolaos G. Bardis, and Nikolaos Doukas. "Consensus algorithms within the C4ISR architecture." *Journal of Computations & Modelling 3, no. 4* (2013): 103-114.
35. Bardis, Nikolaos G., Nikolaos Doukas, and Oleksandr P. Markovskiy. "Hash addressing of the quasi-permanent key arrays in multilevel memory.", *Journal of Applied Mathematics and Bioinformatics, Vol. 3, Iss. 4, (2013)*
36. Doukas, Nikolaos, Nikolaos Bardis, and Oleksandr P. Markovskiy. "Authentication and Integrity in Streaming Video Transmission." *Mathematics and Computers in Science and Engineering Series 12* (2013).
37. VOLOS, Ch K., et al. "Chaotic Autonomous Mobile Robot for Military Missions.", *17th International Conference on Communications, Rhodes Island, Greece (2013)*

38. Alexandris, George P., Nikolaos V. Karadimas, and Nikolaos Doukas. "An object oriented approach for the discertization process." Proceedings of the 11th international conference on Applications of Electrical and Computer Engineering. World Scientific and Engineering Academy and Society (WSEAS), 2012.

Other Knowledge:

- Volunteer first aider with St John Ambulance (1996 -).

International Recognition:

- Reviewer in several WSEAS journals and conferences
- EDAS Technical Program Committee memberships:
 - **As Technical Program committee member:** Military Communications Conference (Milcom) 2014 - Track 1, Proceedings of Open Library of Engineering Sciences (POLES) Journal, Sensor Signal Processing for Defence Conference (SSPD) 2012.
 - **As Designated Reviewer:** CHUSER 2012, ICCSII 2012, PECON 2012, SCOReD 2012, ISBEIA 2012, ISIEA 2012, ICCSII 2013, ICA 2013, BEIAC 2013, CEAT 2013, ISBEIA 2013, SHUSER 2013, ISIEA 2013, ICoICT 2013, ROBIONETICS 2013, TIME-E 2013, ICoICT 2014, TIME-E 2014, CHUSER 2014, ISGT14, ICoSSEET 2014, I4CT'2014, INAGENTSYS 2014, ICOST 2014
- Citations: Google scholar, 30 citations in 13 papers in the last 5 years with 88 citations in total.