Joan L. Jani, MSc, PhD

Personal Information

ADDRESS:	Rruga e Kavajës, Pall 207, Shk 6, Ap. 44, Tiranë
DATE OF BIRTH:	24 March 1983
MARITAL STATUS:	Married
MOBILE:	+355 69 69 73 961
EMAIL:	j.jani@fimif.edu.al

Education

April 2015 — **PhD: Polytechnic University of Tirana**
PhD Thesis: "Analyzing chaotic signals and their use in cryptography"
Advisor: Prof. Dr. Partizam Malkaj,

July 2010 — **MSc: Electronics and Radioelectrology (Telecommunication Engineering)**
University of Athens, Greece
MSc Thesis: "Chaotic operation by a single transistor circuit"
Advisor: Prof. George Tombras,

October 2007 — **BSc: Degree in Physics (4 year program)**
Aristotle University of Thessaloniki, Greece
Specialized in Electronics and Telecommunications

Work Experience

2011 - — **Lecturer at Polytechnic University of Tirana**
Courses: *General Physics, Computational Physics, Optics*
Full time lecturer at the Department of Engineering Physics at Technical University of Tirana.

2013 - 2014 — **Lecturer at Medical University of Tirana**
Courses: *Singal Theory, Fundamentals of Telecommunications*
Part time instructor for the Bachelor Courses "Signal Theory" and "Fundamentals of Telecommunications" at Albanian University.

2013 - 2014 — **Lecturer at Albanian University**
Courses: *Singal Theory, Fundamentals of Telecommunications*
Part time instructor for the Bachelor Courses "Signal Theory" and "Fundamentals of Telecommunications" at Albanian University.

2011 - 2014 — **Lecturer at Logos University**
Courses: *Introduction to Programming, C Language*
Part time instructor for the Bachelor Courses "Introduction to Programming" and "C Language" at Logos University.

2011 - 2011
6 months — **Internship at IMEC-NL**
Working at real-time localization using ultra-wide band IEEE 802.15.4a. My assignment was to develop and to implement in VHDL and Matlab a channel estimator. The channel estimator is based in Least Mean Square algorithm.

2008 - 2010
18 months — **Teaching Assistant**
Courses: Electronics Laboratory (undergraduate),University of Athens, Greece
Taught third year undergraduate students, how to implement simple analog and digital electronic circuits in the laboratory.

Publications

Journals (11)

1. **Joan Jani**, "Numerical Simulation and Analysis of the Duffing System using Python," WSEAS TRANSACTIONS ON SYSTEMS, Print ISSN: 1109-2777, E-ISSN: 2224-2678, vol. 23, pp. 301-305, 2024, DOI:10.37394/23202.2024.23.33

2. **Joan Jani**, "Exploring Non-linear Dynamics: Constructing the Bifurcation Diagram of a Damped Driven Pendulum using Python", WSEAS TRANSACTIONS ON SYSTEMS, ISSN: 1109-2777, E-ISSN: 2224-2678, Vol. 23, pp. 243-248, 2024 DOI:10.37394/23202.2024.23.27

3. **Joan Jani**, "Unveiling Chaos in Semiconductor Lasers: A Simulation-Based Study Using Vicente Equations," INTERNATIONAL JOURNAL ON APPLIED PHYSICS AND ENGINEERING, E-ISSN: 2945-0489, vol. 3, pp. 38-42, 2024, DOI:10.37394/232030.2024.3.6

4. **J. Jani**. "Simulation of Chaotic Operation of a Damped Driven Pendulum Using Python", WSEAS TRANSACTIONS ON ADVANCES IN ENGINEERING EDUCATION, Vol. 20(2023), pp. 1- 6 Print ISSN: 1790-1979. E-ISSN: 2224-3410

5. 6. M. Xhoxhi, **J. Jani**, P. Malkaj "Analysis of Phase Error and Cross Talk for the Young Interferometer Immunosensor," IOSR JOURNAL OF APPLIED PHYSICS (IOSR-JAP), e-ISSN: 2278-4861, Volume 7, Issue 6 Ver. II (Nov. - Dec. 2015), pp. 71-77, DOI: 10.9790/4861-07627177

6. A. Hoxha, **J. Jani**, "The Diffusion Coefficients of Cu and Zn in A- and H-Solid Solutions", INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOL. 4 (2015), ISSUE 06, 173-176

7. **J. Jani**, P. Malkaj, "Evaluating the synchronization of a chaotic encryption scheme using different channel parameters", IOSR JOURNAL OF ELECTRICAL AND ELECTRONICS ENGINEERING (IOSR-JEEE), e-ISSN: 2278-2834, p- ISSN: 2278-8735. Vol. 10(1) (2015), pp. 32-35

8. **J. Jani**, P. Malkaj, "Numerical Calculation of Lyapunov Exponents in Various Nonlinear Chaotic Systems", INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH, VOLUME 3, Issue 7, 2014; 87-90

9. "Sisteme jo-lineare dhe prezenca e kaosit në ato", **Joan Jani**, Revista Shkencore Logos, Vellimi 2, 2014, Tirane, Albania, ISSN: 2308-2208

10. Dh. Kuqi, E. Gavoçi, M. Kuqali, A. Hoxha, **J. Jani**. 'Evaluation of the Uniformity of the Magnetic Field Created by a Three-Square-Coil Exposure System" BULETINI I SHKENCOR I UNIVERSITETIT TË ELBASANIT, SERIA E SHKENCAVE TË NATYRËS (4), 2012.

11. M.P. Hanias, G.S. Tombras, **I. L. Giannis**, "Chaotic operation by a single transistor circuit in the reverse active region", CHAOS 20, 013105 (2010).

Coferences (16)

1. **J. Jani**, "Exploring Chaos In Chua's Circuit Through Python Simulation", 11TH INTERNATIONAL EUROPEAN CONGRESS ON ADVANCED STUDIES IN BASIC SCIENCES, 11-13 November 2024, Roma, Italy

2. **J. Jani**, "The Transition from Order to Chaos of a Non-Linear System Using Computational Techniques," INTERNATIONAL CONFERENCE ON APPLIED SCIENCES AND ENGINEERING 2022, ICEAS 2022, 17-18 November 2022, Polytechnic University of Tirana, Albania

3. **J. Jani**, "Numerical Integration of Delay Differential Equations Using Python Programming Language and Comparing with MATLAB Methods", INTERNATIONAL EUROPEAN CONFERENCE ON INTERDISCIPLINARY SCIENTIFIC RESEARCHES, January 28-29, 2022 Valencia, Spain.

4. **J. Jani**, R. Basha, "A Prototype Autonomous Vehicle for Research and Rescue Based on Arduino Uno Microcontroller", INTERNATIONAL LIBERTY INTERDISCIPLINARY STUDIES CONFERENCE, January 16-17, 2022, Manhattan, New York.

5. **J. Jani**, M. Kurtulaj, "The Maxwell Distribution of Molecular Speeds Generated by Monte Carlo Simulation Techniques", INTERNATIONAL ANTALYA SCIENTIFIC RESEARCH AND INNOVATIVE STUDIES CONGRESS, 18-21 December 2021, Antalya, Turkey.

6. **J. Jani**, P. Malkaj, "Chaotic Encryption Based on A Solid-State Laser Operating in Master-Slave Configuration," 9TH INTERNATIONAL PHYSICS CONFERENCE OF THE BALKAN PHYSICAL UNION (BPU-9), 24–27 August 2015, Istanbul, Turkey

7. D. Xhako, R. Zeqirllari, **J. Jani**, "The Physical Scale from String Tension in LQCD", THE 10TH JUBILEE INTERNATIONAL CONFERENCE OF THE BALKAN PHYSICAL UNION, 26–30 August 2018, Sofia, Bulgaria

8. D. Hyka-Xhako, N Hyka, **J. Jani**, "A method for determination of relative bone density in implantology," THE 10TH JUBILEE INTERNATIONAL CONFERENCE OF THE BALKAN PHYSICAL UNION, 26–30 August 2018, Sofia, Bulgaria

9. **J. Jani**, P. Malkaj, "Chaotic encryption based on a solid-state laser operating in master slave configuration", 9th INTERNATIONAL PHYSICS CONFERENCE, August 24–27, 2015, Istanbul University, Istanbul, Turkey.

10. **J. Jani**, P. Malkaj, "Evaluation of Performance of Chaotic Masking Encryption Scheme", INTERNATIONAL CONFERENCE ON "NEW TECHNOLOGIES AND APPLICATIONS IN MEDICINE" (NTAM 2014), November 2014, Tirana, Albania

11. **J. Jani**, A. Asimi, P. Malkaj, "Applications of Chaotic Dynamics in Electrocardiogram Signals", INTERNATIONAL CONFERENCE ON" NEW TECHNOLOGIES AND APPLICATIONS IN MEDICINE" (NTAM 2014), November 2014, Tirana, Albania.

12. **J. Jani**, P. Malkaj, "Simulation and implementation of the Chua's chaotic oscillator", INTERNATIONAL CONFERENCE ON RESEARCH AND EDUCATION IN NATURAL SCIENCES, (RENS 2013), November 2013, Shkodër, Albania

13. **J. Jani**, P. Malkaj, "Nonlinear time series analysis of an externally triggered double transistor chaotic circuit", THE 1ST INTERNATIONAL CONFERENCE ON "RESEARCH AND EDUCATION– CHALLENGES TOWARDS THE FUTURE" (ICRAE2013), 24-25 MAY 2013, Shkodra, Albania.

14. I. Bërdufi, D. Mitrushi, P. Berberi, **J. Jani**, V. Muda, D. Topçiu, U. Buzra, M. Gjonaj, F. Hoxhaj. "Estimation Performance of a Photovoltaic System Connected to the Grid by Using Evans and Durisch Models". THE 1ST INTERNATIONAL CONFERENCE ON "RESEARCH AND EDUCATION– CHALLENGES TOWARDS THE FUTURE" (ICRAE2013), 24-25 MAY 2013, Shkodra, Albania.

15. Dh. Kuqi, E. Gavoci, M. Kuqali, **J. Jani**, "Analytical study of the exposure system of three rectangular coils and evaluation of magnetic field uniformity", INTERNATIONAL CONFERENCE ON TOWARDS FUTURE SUSTAINABLE DEVELOPMENT, November 2012, Shkoder, Albania.

16. **I. Giannis**, P. Malkaj, N. Hyka, "Blind estimation of SNR in medical images", THE 8TH GENERAL CONFERENCE OF BALKAN PHYSICAL UNION, 5-7 July 2012. Constanta, Romania.

European Projects (2)

2022-2025:   Coordinator of Jean Monnet Module, **Innovative STEM teaching practices in Albania towards European Integration, ISTA-EU**, ERASMUS-JMO-2022-HEI-TCH-RSCH

2023-2026:   Team member of Jean Monnet Module, **Digital education in Albanian universities to provide high-quality life-long learning opportunities: an European approach, DEAL-EU**, ERASMUS-JMO-2023-HEI-TCH-RSCH

Conference Secretariat

NATM 2014:   **Organizing Committee**
Member of organizing committee of the The First International Conference On Applied Sciences "New Technologies and Applications in Medicine, NTAM 2014", held on November 7- 8, 2014 in Tirana, Albania

ICEAS 2017:   **Organizing Committee**
Member of organizing committee of the 2nd International Conference on Applied Sciences and Engineering 2022 (ICEAS 2022), held on 16th and 17th of November 2017, in Tirana, Albania.

ICEAS 2022:   **Organizing Committee**
Member of organizing committee of the 3nd International Conference on Applied Sciences and Engineering 2022 (ICEAS 2022), held on 17th and 18th of November 2022, in Tirana, Albania.

Computer Skills

- *Software programming*: C/C++, Java, Fortran, Python

- *Development Tools:* GCC, MS Visual Studio, KDevelop

- *Hardware description languages*: VHDL, Verilog

- *Design Tools*: Xilinx ISE, Modelsim, Electronic Workbench, SPICE

- *Development Board:* Spartan III and V FPGA Board

- *Technical Computing*: MathWorks Matlab & Simulink , Wolfram Research Mathematica

- *Office Automation*: MS Office, OpenOffice, LaTeX

- *Operating Systems*: Windows, Linux