

PERSONAL INFORMATION **Georgia Koutsandria**

WORK EXPERIENCE

07/2020–Present **Senior R&D Engineer, Technical Team Leader**

Wsense Srl, Rome, Italy

My activities focus on the design, implementation and performance evaluation of pioneering underwater wireless networking solutions. I am also Technical Team Leader in various national and international R&D projects.

10/2018–06/2020 **Postdoc Researcher**

Dept. of Computer Science, Senses Lab, University of Rome “La Sapienza”, Italy

Design, implementation, and performance evaluation through simulations and testbed deployments of novel optimized cross-layer strategies for wireless sensor networks (WSNs) equipped with energy harvesting and radio triggering capabilities. Preparation of technical and financial documentation for project expenses reimbursement.

08/2014–11/2014 **Junior Specialist Researcher**

Dept. of Electrical and Computer Engineering, CRISP Lab, University of California, Davis, USA

Investigation of vulnerabilities of the Power Grid by combining the knowledge obtained from the expected physical behavior of the system. Development of Intrusion Detection Systems (IDS) through intelligent intrusion detection techniques that exploit the knowledge of the predictable patterns of communication that support protection schemes to determine traffic that is an outlier.

EDUCATION AND TRAINING

11/2014–10/2018 **PhD in Computer Science**

University of Rome “La Sapienza”, Italy

Thesis: “Building a Green Connected Future: Smart (Internet of) Things for Smart Networks”

Advisor: Prof. Chiara Petrioli

09/2017–12/2017 **Visiting Research Scientist**

Dept. of Electrical and Computer Engineering, Northeastern University, Boston, USA

Faculty Host: Prof. Stefano Basagni

09/2012–09/2014 **MSc in Electrical and Computer Engineering**

University of California, Davis, USA

Thesis: “Cyber-Physical Security for Power Grid Protection”

Advisor: Prof. Anna Scaglione

09/2006–09/2012 **Ptychio (5 years program) in Electronic and Computer Engineering**

Technical University of Crete, Chania, Greece

Thesis: “Investigation of Resource Allocation and Bandwidth Pricing for Cloud Computing Architectures”

Advisor: Prof. Polychronis Koutsakis

CERTIFICATIONS

Online course Foundations of Project Management, Google, issued by Coursera, June 2023

R&D PROJECTS AND EXPERIENCE

WSense Srl I have been part of the proposal writing team for European and Italian projects. I have been actively involved in several national and international projects and experimental campaigns at sea for the deployment and evaluation of underwater networking solutions, including EDIDP SEANICE, PNRM MEDUSA, PNRM DAMPS, PNRM FRONTCOM.

Sapienza University of Rome

- Smart Cities SMARTOUR: Preparation of technical and financial documentation for project expenses reimbursement.
- PON ARES: Preparation of technical and financial documentation for project expenses reimbursement.
- PON SI-ROBOTICS: Design and implementation of networking protocols for low energy wireless sensor networks for mobile robotics for active and healthy ageing. Preparation of technical and financial documentation for project expenses reimbursement.
- PON DELIAS: Development of networking protocols and integrated solutions for low energy sensor networks for microclimatic and structural monitoring. Preparation of technical and financial documentation for project expenses reimbursement.
- Research Grant for Young Investigators: *Building a Green Connected Future: Smart (Internet of) Things for Smart Networks*.

University of California, Davis, USA

- US Department of Energy (DOE) project: Trustworthy Cyber Infrastructure for the Power Grid (TCIPG). *Functional Security Enhancements for Existing SCADA Systems*. Joint project with UIUC, Cornell, Dartmouth and Washington State University.
- US Department of Energy's Cybersecurity for Energy Delivery Systems (CEDS) program. *Application of Cyber Security Techniques in the Protection of Efficient Cyber-Physical Energy Generation Systems*. Lead organization: Lawrence Berkeley National Laboratory, Participating Organization: University of California Davis

TEACHING EXPERIENCE

Sapienza University of Rome

- Internet of Things (Prof. Petrioli), 2015-2016, 2018-2019, 2019-2020
- Reti degli Elaboratori (Prof. Petrioli), 2018-2019, 2019-2020

Northeastern University

- Fundamentals of Networks (Prof. Basagni), Fall 2017

SCHOLARSHIPS AND FELLOWSHIPS

- Research Scholarship, University of Rome "La Sapienza", Italy, July 2018–June 2020, Feb.-May 2018, Dec. 2017-Jan. 2018.
- N² Women Young Researcher Fellowship, IEEE WoWMoM 2018
- Scholarship for a period abroad, University of Rome "La Sapienza", 2017.
- Research Grant for Young Investigators, University of Rome "La Sapienza", 2016.
- Summer School Scholarship, 1st IEEE ComSoc Summer School, 2015.
- Sapienza PhD Fellowship, University of Rome "La Sapienza", Italy, 2014-2017.
- Summer School Scholarship, Trustworthy Cyber Infrastructure for the Power Grid, 2013.
- Graduate Studies Research Assistantship, University of California Davis, USA, 2012-2014.
- Undergraduate Studies Fellowship, Technical University of Crete, Chania, Greece, 2009.

SCIENTIFIC AND TECHNICAL SOFTWARE

C. McParland, S. Peisert, A. Scaglione, G. Koutsandria, V. Muthukumar, M. Parvania, R. Gentz, "HC-NIDS: Signatures and Simulations for Detecting Cyber-Attacks Aiming to Cause Damage Against Cyber-Physical Energy Systems", *Copyright (c) 2014, The Regents of the University of California, through Lawrence Berkeley National Laboratory*.

PERSONAL SKILLS

Mother tongue Greek

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C1
French	B1	B1	B1	B1	B1
Italian	C1	C1	C1	C1	B2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

- Computer skills**
- Scientific programming tools and software: Matlab/Simulink, Maple, CPLEX, Flex, Bison, SIMATIC STEP 7
 - Programming Languages: C++, C, Java, Python, Ladder logic, SQL, Bro Scripts, nesC, Assembly, VHDL
 - Network simulators: OMNeT++, Castalia, GreenCastalia, ns2, SUNSET
 - Software IDE/Robot Control SW: Eclipse, Microsoft Visual Studio, ROS
 - Hardware platforms and boards: Siemens PLC, Telosb, MagoNode++, Raspberry Pi, Arduino
 - Operating Systems: Linux, Apple OS X, Microsoft Windows, TinyOS

PUBLICATIONS

G. Koutsandria, V. Di Valerio, D. Spenza, S. Basagni and C. Petrioli, "Wake-up Radio-based Data Forwarding for Green Wireless Networks", Computer Communications. Special Issue on Machine Learning Approaches in IoT Scenarios, 160: 172-185, June 3, 2020.

S. Basagni, G. Koutsandria, C. Petrioli, "A Comparative Performance Evaluation of Wake-up Radio-based Data Forwarding for Green Wireless Networks", in Proc. of the IEEE International Conference on Computer Communications and Networks (ICCCN), Hangzhou, China, 2018.

S. Basagni, V. Di Valerio, G. Koutsandria, C. Petrioli, "On the Impact of Local Computation Over Routing Performance in Green Wireless Networks", in Proc. of the IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WoWMoM), Chania, Greece, 2018.

S. Basagni, V. Di Valerio, G. Koutsandria, C. Petrioli, D. Spenza, "WHARP: A Wake-up Radio and Harvesting-based Forwarding Strategy for Green Wireless Networks", in Proc. of IEEE MASS 2017, Orlando, FL, USA, 2017.

S. Basagni, V. Di Valerio, G. Koutsandria, C. Petrioli, "Wake-up Radio-enabled Routing for Green Wireless Sensor Networks", in Proc. of IEEE 86th Vehicular Technology Conference (VTC 2017 Fall), Toronto, Ontario, Canada, 2017.

G. Koutsandria, M. Skevakis, A. Sayegh, and P. Koutsakis, "Can Everybody be Happy in the Cloud? Delay, Profit and Energy-Efficient Scheduling for Cloud Services", Journal of Parallel and Distributed Computing, Vol. 96, 2016, pp. 202-217.

G. Koutsandria, R. Gentz, M. Jamei, A. Scaglione, S. Peisert, and C. McParland, "A Real-Time Testbed Environment for Cyber-Physical Security on the Power Grid", in Proc. of the 1st ACM Workshop on Cyber-Physical Systems Security & Privacy (CPS-SPC), Denver, CO, 2015.

G. Koutsandria, V. Muthukumar, M. Parvania, S. Peisert, C. McParland, and A. Scaglione, "A Network IDS for Protection Digital Relays in the Power Grid", in Proc. of the 5th IEEE International Conference on Smart Grid Communications (SmartGridComm), Venice, Italy, 2014.

M. Parvania, G. Koutsandria, V. Muthukumar, S. Peisert, C. McParland, and A. Scaglione, "Hybrid Control Network Intrusion Detection Systems for Automated Power Distribution Systems", in Proc. of the 44th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Atlanta, GA, 2014.

C. Stamos, D. Vasileiadou, G. Koutsandria, I. Spanou, A. Vlachaki, A. Lazaris and P. Koutsakis, "User-Satisfaction Based Resource Allocation for GEO Satellites", in Proc. of the IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM), San Francisco, USA, 2012.