

Sara Rampazzi

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Computer Science and Engineering
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Research areas	Embedded hardware security, embedded systems design, modeling, and simulation with application to medical devices, automotive, and the Internet of Things.	
Education	University of Pavia Pavia, Italy PhD in Electronics, Computer Science and Electrical Engineering, 2014. Thesis: Embedded system for Lab-On-Chip biosensors Advisor: Giovanni Danese	
	University of Pavia Pavia, Italy MEng in Computer Science Engineering, 2010. Thesis: Design and implementation of a portable device for multi-parameter analysis based on Surface Plasmon Resonance Advisor: Francesco Leporati	
	University of Pavia Pavia, Italy BS in Computer Science Engineering, 2008.	
Academic positions	Electrical Engineering & Computer Science, Univ. Michigan Ann Arbor, MI Research Investigator, Feb 2018 - present	
	Electrical Engineering & Computer Science, Univ. Michigan Ann Arbor, MI Computer Science Research Affiliate, Aug 2017 – Jan 2018	
	Computer Science Engineering, Univ. Pavia Pavia, Italy Postdoc fellow, 2014	
Research experience	Principal Researcher for MCity PASS project Ann Arbor, MI University of Michigan, 2018-present The Protecting Automotive Analog Sensor Security (PASS) project aims to protect sensors at the analog layer to enable automotive systems to better assess the trustworthiness of input from untrusted sensors.	
	Senior personnel on THAW Ann Arbor, MI University of Michigan, 2018-present The Trustworthy Health and Wellness (THAW) is an NSF-funded project that tackles the fundamental challenges necessary to provide trustworthy information systems for	

health and wellness.

Visiting researcher at Integrated System Design Division

Applied Microelectronic, Univ. de Las Palmas de Gran Canaria, Spring 2014.

Researcher project on Support Vector Machine (SVM) for Hyperspectral Images classification.

Las Palmas de Gran Canaria, Spain

Teaching experience

EECS 496 - Major Design Experience Professionalism

Lecturer. Department of Electrical Engineering and Computer Science, University of Michigan, Winter 2019

Topic: Design principles for multidisciplinary team projects, team strategies, entrepreneurial skills, ethics, social and environmental awareness, and life long learning.

C coding

Instructor of record. Department of Mathematics, University of Pavia, 2013 - 2014

Topic: Ansi C Program language syntax and static and runtime semantics.

Introduction to Computer Systems II

Instructor of record. Computer Science Engineering, University of Pavia, 2010 -2012

Topic: introduction to web programming, HTML, CSS, JAVASCRIPT language syntax and examples of application.

Introduction to Computer Systems

Teaching Assistant. Computer Science Engineering, University of Pavia, 2007-2010

Topic: Ansi C Program language syntax and semantics.

Industry experience

Azcom Technology

Firmware developer for LTE embedded system, 2016-2017

Client: **Blue Danube Inc.**

Project: Firmware and software developer for smart antenna based wireless network.

Assago, Italy

Alten Italia

Software engineer consultant, 2015-2016

Client: **Leonardo S.p.A.**

Project: Embedded software developer for the spacecraft EUCLID Command and Data Handling (C&DH) system and orbit control.

Client: **Magneti Marelli (Fiat Chrysler Automobiles Group)**

Project: Model-based design engineer for HMI (Human-Machine Interface) in automotive cluster area.

Milano, Italy

Refereed conference publications

C Bolton, **S Rampazzi**, C Li, A Kwong, W Xu, K Fu, "Blue Note: How Intentional Acoustic Interference Damages Availability and Integrity in Hard Disk Drives and Operating Systems". In Proceedings of the *39th Annual IEEE Symposium on Security and Privacy*, May 2018.

S Rampazzi, F Leporati, G Danese, N Nazzicari, L Fornasari, F Marabelli, A. Valsesia, “A Novel Portable Surface Plasmon Resonance Based Imaging Instrument for On-Site Multi-Analyte Detection”. In *Federated Conference on Computer Science and Information Systems (FedCSIS '13)*, Kraków, 8-11 Sept. 2013, pp. 619-626.

S Rampazzi, G Danese, L Fornasari, F Leporati, F Marabelli, N Nazzicari, A. Valsesia, “Lab On Chip: Portable Optical Device for On-Site Multi-parametric Analysis”. In *IEEE Euromicro Conference on Digital System Design (Euromicro DSD'13)*, 4-6 Sept 2013, pp. 807-810.

Refereed journal publications

S Marini, F Vitali, **S Rampazzi**, A Demartini, T Akutsu, “Protease target prediction via matrix factorization”. In *Bioinformatics*, 29 Aug. 2018, bty746.

S Rampazzi, G Danese, F Leporati, F Marabelli, “A Localized Surface Plasmon Resonance-Based Portable Instrument for Quick On-Site Biomolecular Detection”. In *IEEE Transactions on Instrumentation and Measurement*, Vol. 65 Is. 2, 1 Dec. 2015, pp. 317-327.

Unrefereed publications

S Marini, F Vitali, **S Rampazzi**, A Demartini, T Akutsu, “Protease target prediction via matrix factorization”, bioRxiv, 2018/1/1

Posters

A Rodriguez, **S Rampazzi** and K Fu, “IoT Two Factor Neurometric Authentication System using Wearable EEG”. In the Poster Session of the IEEE Workshop on the Internet of Safe Things (SafeThings 2019), May 2019.

C Bolton, **S Rampazzi**, C Li, A Kwong, W Xu, K Fu, “Blue Note: How Intentional Acoustic Interference Damages Availability and Integrity in Hard Disk Drives and Operating Systems”. In the Poster Session of the 39th Annual IEEE Symposium on Security and Privacy, May 2018.

Patents issued

Rampazzi Sara, Danese Giovanni, Fornasari Lucia, Leporati Francesco, Marabelli Franco, Nazzicari Nelson, Valsesia Andrea “Detection device of molecular compounds based on Surface Plasmon Resonance”. European patent #IT2013MI01345 20130806. Priority 2013. Issued 2015.

Invited talks and seminars

“Cybersecurity in Hospitals: confronting EU and US strategies” Seminar & discussion panel in second level postgraduate Master in Cyberlaw and Policies for Digital Innovation, University of Milan, Bicocca, 12/19/2018

“Cybersecurity and Implantable Devices”. In Women in Electrophysiology, Medical Education - Medtronic Accademy, 10/13/2018

“Fear The Hacked IoT Medical Devices: the apocalypse is already happening, and no one noticed?”. In Proceedings of USENIX 2018 Summit on Hot Topics in Security (HotSec 18), 08/14/2018

“Sensor Security in Cyber-Physical Systems”, seminar for graduate students of the Ph.D. School of Electrical and Electronics Engineering and Computer Science, University of Pavia, 07/15/2018

“Portable Lab-on-chips for biomolecular detection”, seminar in first level postgraduate Master and Specialization Course in Clinical Engineering, University of Pavia, 04/12/2016

“A Novel Portable Surface Plasmon Resonance Based Imaging Instrument for On-Site Multi-Analyte Detection”. Conference presentation in the 6th International Symposium on Multimedia Applications and Processing, collocated event of FedCSIS 2013, Kraków, 9/10/2013.

Service to profession

Technical Program Committee Member of SafeThings 2019 - IEEE Workshop on the Internet of Safe Things

Colocated with 2019 IEEE Symposium on Security and Privacy
May 20-22, 2019 - San Francisco, California, USA

Peer Reviewer

ACM Transactions on Privacy and Security; 2019 - *present*

Science Magazine; 2018 - *present*

Sensors; 2016 - *present*

NSF SaTC grant proposal review panelist

Panelist reviewer for small (500K) grant proposals on the Secure and Trustworthy Cyberspace (SaTC) program of the National Science Foundation; 2018 - *present*

Consultant for Archimedes, Center of Medical Device Security

University of Michigan, 2018-*present*

Archimedes is an independent, pioneering center created to help manufacturers, industry experts and physicians to navigate the operational hazards of cybersecurity implementation in healthcare.

Mentoring & Advising

Computer Engineering Undergraduate Advisor

University of Michigan, Winter 2019

Helping students in the undergraduate programs offered through the Electrical Engineering and Computer Science Department.

Mentor for the First Generation Engineering Program

University of Michigan, 2018-*present*

The purpose of the program is to bring first generation Michigan Engineering students (undergraduate & graduate) together to build the community, and share resources and experiences.

Society of Women Engineers Summer Camp mentor

University of Michigan, Summer 2018

Summer Engineering Exploration (SEE) Camp mentor for high school students interested in engineering and security in Cyberspace.

IEEE Student Branch Computer Science Area Advisor

IEEE Pavia Student Branch, Region 8, Italian section,
University of Pavia, 2011-2014.

Introducing computer science engineering undergraduate students to research and encouraging them to meet and share their ideas in their areas of interest and future profession.

Organization committee member

Euromicro SEAA 2014/ DSD 2014 Conference, Verona (Italy), 2014

Technical Skills	Programming languages:	Matlab, C, Perl, Java
	Design/Modelling/ Simulation tools:	Matlab-Simulink, COMSOL Multiphysics, StateFlow, IBM Rational Rhapsody.
	Programming/ Validation/Testing tools:	IBM Rational Logiscope, GNURadio, QA System Cantata++, dSpace Target Link, MPLAB, MikroC for PIC and ARM
Languages	Italian	Native speaker
	English	Fluent
	Spanish	Fluent