Sara Rampazzi

Department of Electrical Engineering
and Computer Science

University of Michigan
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	**Applied Microelectronic, Univ. de Las Palmas de Gran Canaria**	Las Palmas de Gran Canaria, Spain
	Visiting researcher, Integrated System Design Division, Spring *2014*. Researcher on Support Vector Machine (SVM) for Hyperspectral Images classification.	
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.

Industrial experience	**Azcom Technology**	Assago, Italy

Firmware developer for LTE embedded system, *2016-2017*
Client: **Blue Danube Inc.**
Project: Firmware and software developer for smart
antenna based wireless network.

Alten Italia   Milano, Italy
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.

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
Science Magazine (ISSN 0036-8075), Impact Factor: 37.205; 2018 - *present*
Sensors (ISSN 1424-8220), Impact Factor: 2.475; 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.

Senior personnel on THAW
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.

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