Simone Mora, PhD

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I design and develop methods and tools for collaborative ideation and rapid prototyping of hybrid ecologies. I investigate how to apply human-centric technology to the development of smart sustainable cities, in close cooperation with public administrations and industrial partners. I teach courses in the field of human-computer interaction, rapid prototyping and research methods.

Design science lies at the core of my research approach. I use human-centric methods to understand problems and opportunities for specific domains. I establish a creative dialogue among different stakeholders to elicit requirements and lead design explorations. I turn ideas into prototypes of hybrid artefacts and environments developing code and electronics, often augmenting and hacking everyday things and spaces. I evaluate results with quantitative and qualitative methods.

I speak English (fluent), Italian (mothertongue) and Norwegian (intermediate).

Work History

JUN20 - NOW

Research Scientist
Senseable City Laboratory, Massachusetts Institute of Technology (MIT)

Project Lead of "City Scanner" - A platform to capture and visualize hyperlocal variations in environmental indicators, such as air quality and thermal flux of the build environment. http://senseable.mit.edu/cityscanner

Co-teaching course 11.320 "Digital City Design Workshop"

MAY18 - NOW
Senior from Sept. '19

Senior Postdoctoral Associate[*]
Senseable City Laboratory, Massachusetts Institute of Technology (MIT)

Researcher of project "City Scanner" - http://senseable.mit.edu/cityscanner

Developing co-design tools for Roboat Urban Interfaces - The Roboat project investigates the potential of self-driving technology to change our cities and their waterways. http://roboat.org

Co-teaching course 11.320 "Digital City Design Workshop"

2015 - 2018

Co-Founder
Tiles Technologies AS

Tiles's mission is to design, develop and commercialize novel STEM educational methods and tools leveraging gamification, physical computing and design thinking. http://tilestoolkit.io

Lecturer
Dept. of Design, Norwegian University of Science and Technology (NTNU)

Instructor of "Prototyping Interactive Media" - in this course, 2nd-year bachelor students learn how to design and build interactive and hybrid products. Focus is on designing screen-less, engaging and educational user experiences.

Postdoctoral Associate
Dept. of Computer Science, Norwegian University of Science and Technology (NTNU)

Inventor and lead researcher of Tiles - a toolbox to accelerate ideation and prototyping of IoT products
Research associate of Socratic - a knowledge-based platform to support the social innovation lifecycle http://socratic.eu

Research associate of Umi-Sci-Ed - an EU-H2020 project that aims at enhancing the attractiveness of sci-

Education

2010 - 2015

Ph.D. in Computer Science
Norwegian University of Science and Technology (NTNU)

As research associate of EU project MIRROR, I investigated how to use wearable computing, augmented reality, and mixed reality games to support data-driven and reflective training of crisis workers (e.g. firefighters, paramedics). Advisors: Prof. Monica Divitini, Dott. Babak Farshchian.

PhD Dissertation title: "Leveraging sensing-based interaction for supporting reflection at work: the case of crisis training". Available as PDF.

Inventor and lead researcher of CroMAR - a mobile augmented reality platform to support situated reflection and learning for crisis manager - http://research.idi.ntnu.no/CroMAR

Inventor and lead researcher of WATCHiT - a sensor-based wristband computer for data collection on a crisis scene - http://research.idi.ntnu.no/WATCHiT

Research associate of EU Project MIRROR - Design of technology tools for supporting reflection and learning in the workplace

Supervision of graduate student thesis

Lecturer in courses on ubiquitous computing and collaboration technologies

2014

Visiting Researcher
SENSEable City Lab, Massachusetts Institute of Technology (MIT)

Co-design and construction of "DriveWave" installation http://senseable.mit.edu/wave
Advisor: Prof. Carlo Ratti

2013

Visiting Researcher
Centre for Human Computer Interaction Design, City London University

Design and implementation of gamified experiences for supporting creative problem solving
Advisor: Prof. Neil Maiden

2009

Master of Science (MSc) in Computer Engineering
Università degli studi di Bergamo, Italy

I learned software engineering and security, signal theory and digital electronics design

Master Thesis title: "A mobile extensible architecture for implementing ubiquitous discovery gestures based on object tagging". Advisor (for UniBg): prof. Stefano Paraboschi.

Participant of the ERASMUS program at NTNU

2006

Bachelor of Science (BSc) in Industrial Engineering
Università degli studi di Bergamo, Italy

I learned math, physics, economy, project and risk management

Bachelor Thesis title: "Outsourcing of Informatics process, an analysis driven by hte Total Cost of Owner ship evaluation" (written in Italian) - Advisor: Prof. Matteo Kalchschmidt

Selected Publications (full list at http://simonemora.com/research/publications)

S. Mora, F. Duarte, C. Ratti | Can Open Source Hardware Mechanical Ventilator (OSH-MVs) initiatives help cope with the COVID-19 health crisis? Taxonomy and state of the art | Elsevier HardwareX, 2020

S. Mora, A. Anjomshoaa, T. Benson, F. Duarte, C. Ratti | Towards Large-scale Drive-by Sensing with Multi-purpose City Scanner Nodes | IEEE World Forum on IoT, 2019 | Best Paper Award

A. Anjomshoaa, S. Mora, P. Schmitt, C. Ratti | Challenges of Drive-By IoT Sensing for Smart Cities: City Scanner Case Study | Proceedings of the ACM International Joint Conference and International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers, 2018

F. Gianni, S. Mora, M.Divitini | RapIoT toolkit: Rapid prototyping of collaborative Internet of Things applications | Future Generation Computer Systems Journal, 2018.

S. Mora, F. Gianni, S. Nichele, M.Divitini | Introducing IoT Competencies to First-Year University Students With The Tiles Toolkit | Proceedings of Computer Science Education Research Conference, 2018

S.Mora, F. Gianni and M.Divitini | Tiles: A Card-based Ideation Toolkit for the Internet of Things | Proceedings of the Designing Interactive Systems Conference (DIS), 2017

S.Mora, F. Gianni and M.Divitini | RapIoT Toolkit: Rapid Prototyping of Collaborative Internet of Things Applications | Proceedings of the International Conference on Collaboration Technologies and Systems (CTS), 2016. Outstanding Paper Award

S. Mora, A. Boron, & M. Divitini | CroMAR: Mobile augmented reality for supporting reflection on crowd management | International Journal of Mobile Human Computer Interaction, 2012

S. Mora, I. Di Loreto and M. Divitini | From interactive surfaces to interactive game pieces in hybrid board games | Journal of Ambient Intelligence and Smart Environments, 2016

S. Mora, T. Fagerbekk, M. Monnier, E. Schroeder and M. Divitini | Anyboard: a Platform for Hybrid Board Games | In proceedings of the International Conference on Entertainment Computing (ICEC), 2016.

S. Mora | Leveraging sensing-based interaction for supporting reflection at work: the case of crisis training | Doctoral thesis at NTNU, 2015

L. Muller, M. Divitini, S. Mora, V. Rivera-Pelayo & W. Stork | Context Becomes Content: Sensor Data for Computer Supported Reflective Learning | IEEE Transactions on Learning Technologies, 2015

S. Mora and M. Divitini | WATCHiT: a modular and wearable tool for data collection in crisis management and training | In Proceedings of the European Conference on Ambient Intelligence (AMI), 2014

S. Mora and M. Divitini | Supporting debriefing with sensor data: A reflective approach to crisis training | In proceedings of Information Systems for Crisis Response and Management in Mediterranean countries conference (ISCRAM-MED), 2014

S. Mora | Token-based Interaction with embedded digital information | In proceedings of the International Conference on Tangible, Embedded and Embodied Interaction (TEI), 2013

I. Di Loreto, S. Mora, M. Divitini | Don't Panic: Enhancing Soft Skills for Civil Protection Workers | In proceedings of the International Conference on Serious Games Development and Applications (SGDA), 2012.

S. Mora, V. Rivera-Pelayo, and L. Müller | Supporting Mood Awareness in Collaborative Settings | In proceedings of the 7th International Conference on Collaborative Computing (CollaborateCom), 2011

S. Mora, and B. Farshchian | A Unified Architecture for Supporting Direct Tag-Based and Indirect Network-Based Resource Discovery | In proceedings of the International Conference on Ambient Intelligence (AMI), 2010

Innovation Grants & Awards

2015   Design Driven Innovation Programme | 250kNOK (~32.000USD) -for design of "Future banking and the Internet of Things", together with Nice AS, Sparebank SMN, Evry AS

2014   NTNU Discovery forprosjekt | 150kNOK (~20.000USD) - for commercialisation of "TILES: a toolkit for rapid prototyping of interactive objects"
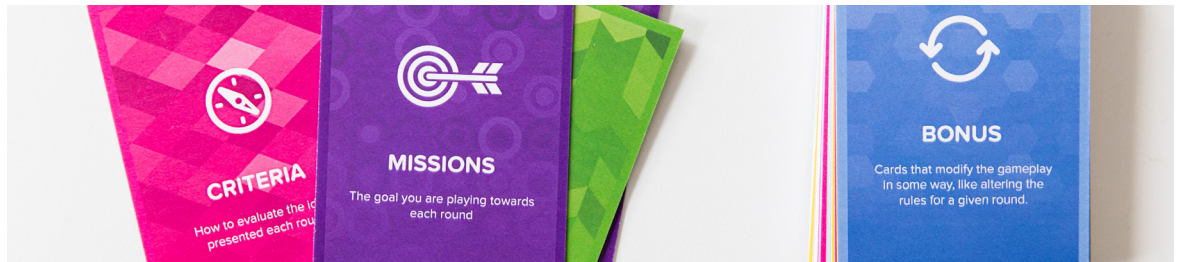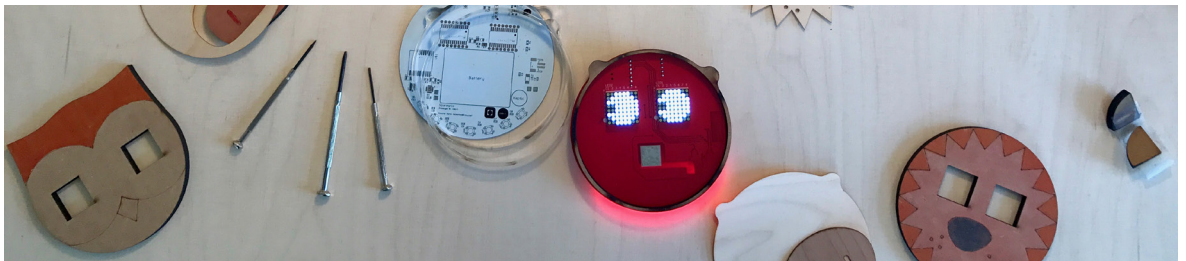
Selected Projects

CITY SCANNER
SENSING PLATFORM
SENSEABLE.MIT.EDU/
CITYSCANNER
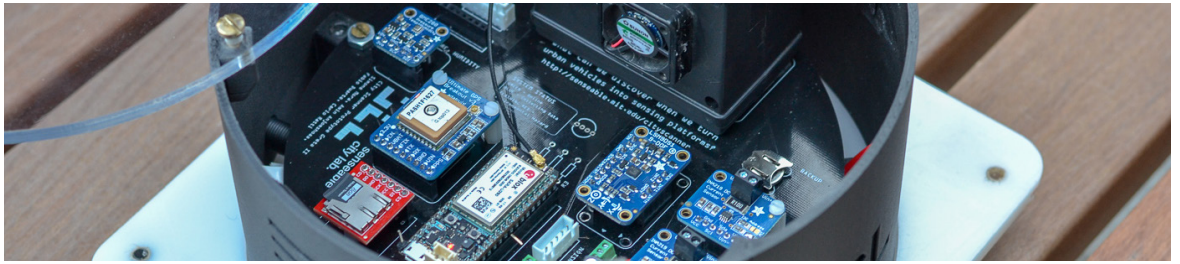
TILES IOT CARDS
CO-DESIGN METHOD
TILESTOOLKIT.IO

BANK OF THINGS
BAKING FOR KIDS

WATCHIT
WEARABLE SENSING
PLATFORM
RESEARCH.IDI.NTNU.NO
/WATCHiT
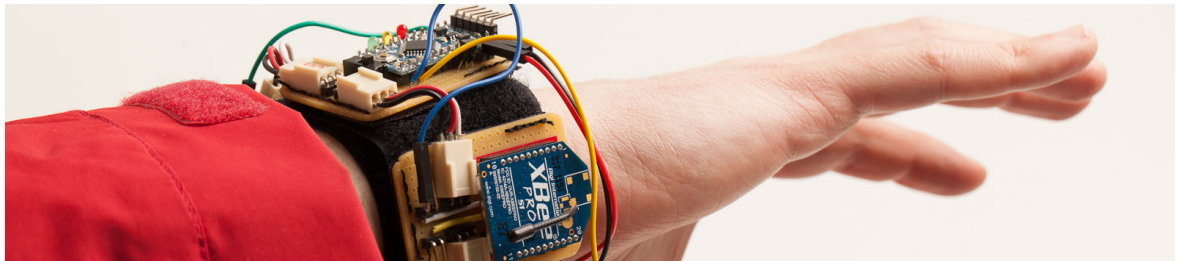
CROMAR
AR FOR CRISIS
RESPONSE
RESEARCH.IDI.NTNU.NO
/CroMAR

ANYBOARD
EDUCATIONAL PLATFORM
FOR HYBRID GAMES

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