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POLITECNICO
MILANO 1863

DIPARTIMENTO DI ELETTRONICA
INFORMAZIONE E BIOINGEGNERIA



SUMMER SCHOOL

“Digital Technologies for Interactive Smart Spaces”

Week 2

July 18-22, 2022

Department of Electronics, Information and Bio-
engineering

Politecnico di Milano | Milan



GENERAL SCHEDULE

All lectures are held in CONFERENCE ROOM “Emilio Gatti” – Ground Floor – Dept. of Electronics, Information and Bio-Engineering - Via Ponzio 34/5

MONDAY JULY 18

WHEN	WHAT	WHO: Students + ...
9:00 – 9:15	Welcome & Introduction	Franca Garzotto and Maristella Matera, Politecnico di Milano
9:15 – 10:30	INDUSTRY PRESENTATION 1 The transformative power of human centric technology	Fabio Violante , CEO – Arduino
10:30 – 11:00	Coffee break	
11:00 – 12:00	INDUSTRY PRESENTATION 2 Internet of (autonomous) things and spaces. business applications and market perspective of the autonomous revolution	Maurizio Griva , Sr Innovation Manager, Concept Engineering REPLY
12.00 – 13.00	INDUSTRY PRESENTATION 3 Designing intelligent experiences: from the single device to the connected digital ecosystem experience	Gianluca Brugnoli , Chief Design Officer - Huawei Milan Aesthetic Research Center (MARC)
13.00 – 14.00	Buffet Lunch	
14.00 – 15.00	INDUSTRY PRESENTATION 4 Digital interactive smart spaces vs. healthcare and rehabilitation	Paolo Meriggi , Sr. R&D Engineer, Fondazione Don Carlo Gnocchi
15:00– 16:00	INDUSTRY PRESENTATION 5 Senior safety – applying technology to support caregivers and their loved ones	Eric Thelen , Consultant, T.net Senior Safety
16.00 – 16.30	Coffee break	
16.30 – 18.30	Project Work: FROM UX DESIGN SPECIFICATIONS to TECHNOLOGY DESIGN SPECIFICATIONS	Tutors

TUESDAY JULY 19

WHEN	WHAT	WHO: Students + ...
9:00 – 10:00	INDUSTRY PRESENTATION 6 Blending physical and digital world: real cases e business opportunities	Matteo Valoriani , CEO FifthIngenium Antimo Musone , CTO FifthIngenium
10:00 – 11:00	INDUSTRY PRESENTATION 7 Iot, Smart Home and Robotics	Stefano Ginocchio , R&D Area IoT, Smart Home and Robotics, Edison SpA
11:00 – 11:30	Coffee break	
11:30 – 12:30	INDUSTRY PRESENTATION 8 Strategies & investments to innovate industrial plants & logistic hubs	Mirko Florindo , Global Head of Digital Industries Solutions Sales Specialists, British Telecom
12.30 – 13.30	Buffet Lunch	
13.30 – 15.00	BIZ ANALYSIS, PLAN AND DEVELOPMENT	Emanuele Pucci , Politecnico di Milano
15.00 -16:30	Project Work: BUSINESS DESIGN	Tutors
16.30 – 17.00	Coffee break	
17.00 – 18.30	Project Work: BUSINESS DESIGN	Tutors

WEDNESDAY JULY 20

WHEN	WHAT	WHO: Students + ...
9:00 – 10:00	INDUSTRY PRESENTATION 9 The perfect storm, in museum space: a revolutionary convergence between physical and digital with ai and big data	Fabrizio Renzi , President & CEO RnB4culture
10:00 – 11:00	INDUSTRY PRESENTATION 10 Digital transformation: tim innovation in the 5g and edge cloud era	Gabriele Elia , Head Technology Communication & Standardization – Technology & Innovation - TIM Massimo Valla , Service Innovation Senior Program Manager – Technology & Innovation, TIM
11:00 – 11:30	<i>Coffee break</i>	
11:30 – 12:30	INDUSTRY PRESENTATION 11 Smart city: the importance of managing data for decision support	Matteo Gattola , CEO – Envision
12.30 – 13.00	HOW TO MAKE A GOOD PITCH	Emanuele Pucci , Politecnico di Milano
13.00 – 14.00	<i>Buffet Lunch</i>	
14.00 – 16.30	Project Work: BUSINESS DESIGN	Tutors
16.30 – 17.00	<i>Coffee break</i>	
17.00 – 18.30	Project Work: BUSINESS DESIGN AND PITCH PREPARATION	Tutors

THURSDAY 21 JULY

WHEN	WHAT	WHO: Students + ...
8:45 – 10:30	Project Work: PITCH PREPARATION	Students
10:30 – 11:00	Coffee break	
11:00 – 13:00	Project Work: PITCH PREPARATION	Students
13.00 – 14.00	Buffet Lunch	
14.00 – 15.00	INDUSTRY PRESENTATION 12 The future is mobile: how mobile experiences can transform the way we live	Sara Negro , Director at Deloitte Digital UK, Mobile Experience Lead, Apple Alliance Design Lead
15.00 – 16.30	PITCH REHARSAL	Tutors
16.30 – 17.00	Coffee break	
16.30 – 18.30	PITCH REHARSAL	Tutors

FRIDAY JULY 22

WHEN	WHAT	WHO: Students + ...
9:00 – 10:45	PITCH PRESENTATION IN FRONT OF THE JURY <i>For each project: 5 min pitch +10 min discussion</i>	Academic/Industry Jury
10:45 – 11:00	Coffee break	
11:00 – 12:00	PITCH PRESENTATION IN FRONT TO THE JURY	Academic/Industry Jury
12.00 – 12.45 - BREAK FOR JURY MEETING AND PROJECT EVALUATION		
12:45 – 13:15	BEST PROJECT PROCLAMATION	Academic/Industry Jury
13.15 – 14.15	Buffet Lunch & Good Bye	

INDUSTRY TALKS - ABSTRACTS

Fabio Violante

Affiliation: Arduino - CEO

Talk time: Monday July 18 (9.15-10.30)

Title: The transformative power of human centric technology

Abstract: As engineers we have the luxury of playing in special position: we get to understand how most of the things that surround us work. We master science and physics. And, today, we can also build computers, software and algorithms that can have a big impact on people's life. This means freedom to invent and change our society.

In this presentation Fabio will walk you through his journey from university to entrepreneurship. He will focus on the role of human centric design as a key for success and will provide you with some lessons learned along his journey.

Maurizio Griva

Affiliation: Sr Innovation Manager, Concept Engineering REPLY

Talk time: Monday July 18 (11.00-12.00)

Title: Internet of (Autonomous) Things and Spaces. Business applications and market perspective of the autonomous revolution

Abstract: Autonomous things, or the Internet of autonomous things, abbreviated as IoAT, is an emerging term for the technological developments that are expected to bring computers into the physical environment as autonomous entities without human direction, freely moving and interacting with humans and other objects. How objects, transportation and eventually spaces will change from blending AI, metaverse and robotics? We will provide a brief overview of the current business trends and potential market successes (and some failures) of IoAT.

Gianluca Brugnoli

Affiliation: PhD, Chief Design Officer Huawei Milan Aesthetic Research Center (MARC).

Talk time: Monday 18 July (12.00-13.00)

Title: Designing intelligent experiences: From the single device to the connected digital ecosystem experience.

Abstract: Fifteen years after the launch of the iPhone, digital has changed everything, deeply embedding itself in everyday life. The first wave of digital transformation was to connect everything to the Internet and endow it with software. This ecosystem of connected things allows us to build a new generation of intelligent experiences enhanced by artificial intelligence and immersive technology. In this ecosystem, everything is connected, and we can combine the various features of different devices to create a "super-device" and offer a new advanced, highly personalised intelligent experience. This is the next phase of digital evolution. The presentation will show a few examples of intelligent applications and scenarios.

Paolo Meriggi

Affiliation: Sr. R&D Engineer, Fondazione don Carlo Gnocchi, Development and Innovation Department

Talk time: Monday July 18 (14.00-15.00)

Title: Digital Interactive Smart Spaces vs. Healthcare and Rehabilitation

Abstract: Despite the wide diffusion of novel digital interactive technologies and smart devices, there is still a slow adoption in the healthcare and rehabilitation fields. In this presentation we will briefly present some ideas about the potential of these technologies and some of the most relevant barriers that are instead slowing their diffusion. We will finally present some projects on we are developing in Fondazione Don Carlo Gnocchi where we are using these novel technologies.

Eric Thelen

Affiliation: Consultant, T.net Senior Safety

Talk time: Monday 18 July (15.00-16.00)

Title: Senior Safety – Applying technology to support caregivers and their loved ones

Abstract: We are getting older. Many of us continue to be quite healthy while we are getting older. However, some of us require additional protection and care as we age and become a “senior”. Eventually, as our abilities naturally decline over time and as our medical condition increasingly requires active maintenance, we all need some additional support. Initially, we often rely on private caregivers – family members and friends without a specific care-related education, who assist us mostly with their physical and mental presence. As our needs become more significant and more medical, we need to obtain the support of professional caregivers – well-educated, skilled people, who get paid to apply their capabilities towards assisting us. Despite an ever-increasing need, the resource of personal caregiving, both private as well as professional, is naturally limited. Furthermore, caregiving is stressful and exhausting, especially when there is a strong emotional relationship between the caregiver and the senior.

In this presentation, we will explore how technology can increase the effectiveness and the efficiency of caregiving. We will especially discuss the Senior Safety solution, which is currently being developed during an EIT Digital Innovation Activity. We will analyze the specific challenges of placing technology into a non-technical environment, with the frail elderly population as the intended target users, who – even worse – do not even want to become users of this technology in the first place. We will try to understand the consequences of this specific environment for system design, user interaction design and marketing. Finally, we will connect our discussion to the Summer School use case on Active Aging and Independent Living.

Matteo Valoriani e Antimo Musone

Affiliation: CEO FifthIngenium, CTO FifthIngenium

Talk time: Tuesday July 19 (09.00-10.00)

Title: Blending physical and digital world: real cases e business opportunities

Abstract: Extended reality is one of the defining technologies of our time, enabling us to bridge the digital and physical worlds. It is therefore important to develop a deep and informed understanding about the technological, conceptual, and practical implications of XR. In this lecture we are going to analyze the fast evolution of this technologies in the last decade and to discuss with real case applications how they will shape the future of virtually every sector in business and society.

Ginocchio Stefano

Affiliation: R&D Area IoT, Smart Home and Robotics, Edison SpA

Talk time: Tuesday July 19 (10.00-11.00)

Title: IoT, Smart Home and Robotics

Abstract: Developing HW and SW solutions for connected devices today is mandatory but not a plus, to increasingly put the human being at the centre we are exploring the perspectives of advanced user interfaces and service robotics.

Mirko Florindo

Affiliation: Global Head of Digital Industries Solutions Sales Specialists, British Telecom

Talk time: Tuesday July 19 (11.30-12.30)

Title: Strategies & Investments to Innovate Industrial Plants & Logistic Hubs

Abstract: Through the result of a survey conducted by BT, we'll see the most used strategies to innovate Industrial Plants & Logistic Hubs.

Resilient infrastructures, Real-Time Supply chain, Smart Safety, Resource optimization & Data-driven production are at the base of the "Sustainable Factories".

The target is clear, but over 70% of the PoCs were unable to scale-up. What are the most common mistakes and barriers?

The evaluation of Business & Technologies drivers is a good starting point to define the solution designer goals getting e a sustainable innovation.

Fabrizio Renzi

Affiliation: President & CEO RnB4culture

Talk time: Wednesday July 20 (09.00-10.00)

Title: The perfect storm, in museum space. A revolutionary convergence between physical and digital with AI and big data

Abstract: In this speech the former director of IBM Research, Italy, eastern europe, middle east and africa, now among other things entrepreneur in cultural space with his company RnB4culture, will first discuss about trends and direction in cultural space and the big convergnece happening between physical and digital triggered by Artificial Intelligence, Big Data and Internet of Things. In his pitch Fabrizio we will also use some examples coming from the recent experience he made firsthand in this space.

Gabriele Elia, Massimo Valla

Affiliation: Head Technology Communication & Standardization – Technology & Innovation;
Service Innovation Senior Program Manager – Technology & Innovation

Talk time: Wednesday July 20 (10.00-11.00)

Title: Digital Transformation: TIM Innovation in the 5G and Edge Cloud Era

Abstract: 5G and Edge and Cloud Computing are the strongest technology forces in the last years changing the reference for innovating in the telecommunication, at the bases of the digital transformation of many different industries. We will describe TIM approach starting from its corporate innovation department, mixing in house and open innovation tools.

Matteo Gattola

Affiliation: CEO - Envision

Talk time: Wednesday July 20 (11.30-12.30)

Title: Smart city: the importance of managing data for decision support

Abstract: The trend of transforming cities in a green and eco-sustainable perspective is unstoppable. Digitalisation is assuming significant and distinctive importance (e.g. Next Generation EU, in Italy PNRR). The 'Smart City' becomes the next step to take in order to address change and generate benefits for people, the community and the environment. The deployment of sensors and the provision of services will have to involve the collection of data, to be managed in Big Data mode and the subsequent processing and correlation, also through the use of advanced systems (artificial intelligence and machine learning).

In this context, administrators will be able to base their decisions on real and meaningful data; citizens will be able to access all the necessary data, in order to make informed choices regarding every aspect of their lives resulting from their interaction with a dynamic and digital city.

The session will analyse how data is collected, its value and aspects aimed at the correct handling of data, in line with current legislation.

Sara Negro

Affiliation: Director at Deloitte Digital UK, Mobile Experience Lead, Apple Alliance Design Lead

Talk time: Tuesday July 21 (14.00-15.00)

Title: The future is Mobile: how mobile experiences can transform the way we live

Abstract: Mobile experience is the way we interact with mobile technology, it's the perception we have of a mobile product and especially of the systems and services behind it. If we shape great mobile experiences we can enrich people's life, we can open new possibilities, we can really change the world. In this hour we will explore through a couple of case studies how mobile can transform the way users interact with the environment and solve complex business problems, improving efficiency, productivity and the quality of people's life.