

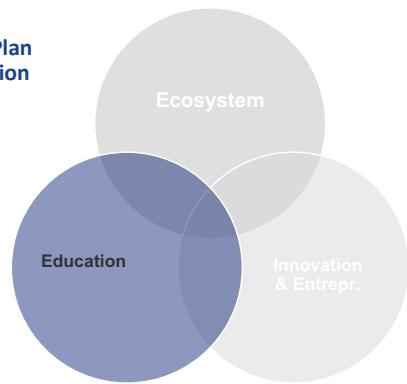


## CxO Visit Italy Node (Education)

Milan, 24 May 2018

Prof. Yannis Velegrakis  
EIT Master Program Coordinator

## Strategic Plan for Education



2

## Education Partners



### Master School

- Università degli Studi di Trento
- Politecnico di Milano



### Doctoral Training Center

- Università degli Studi di Trento
- Politecnico di Milano
- Alma Mater Studiorum - Università di Bologna



3

## Master School



### Enhance attractiveness/quality

KPI: # students from 60 (in 2017) to 100-120 (in 2018)  
50 recruited in Italy

- have continuous dialog among education partners
- visit program coordinators in universities
- agree on number of seats to reach a critical mass
- make sure to maintain attractiveness/quality of programs



4

## UniTrento MS specializations



### Entry

- Internet Technology and Architecture (ITA)
- Visual Computing and Communication (VCC)
- Cyber Security (CSE)
- Autonomous Systems (AUS)

### Exit

- Internet Technology and Architecture (ITA)
- Visual Computing and Communication (VCC)
- Cyber Security (CSE)
- Autonomous Systems (AUS)
- Human Computer Interaction and Design (HCID)
- Embedded Systems (ES)

5

## PoliMi MS specializations



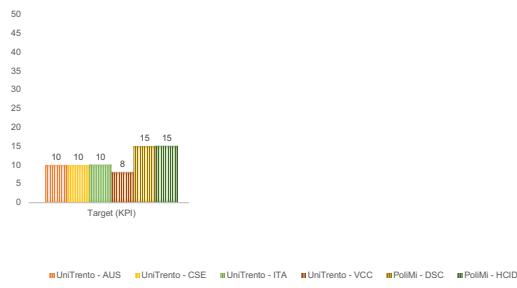
### Entry

- Data Science (DS)
- Human Computer Interaction and Design (HCID)

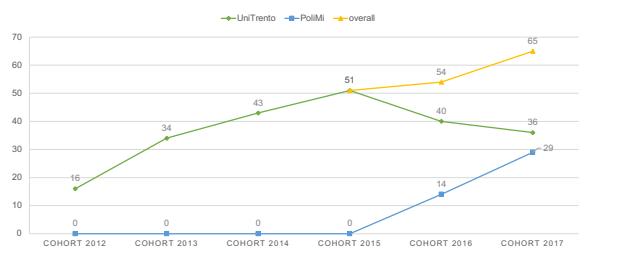
### Exit

6

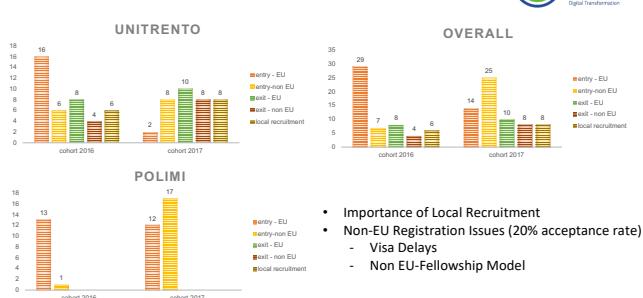
## 2018 Italy Recruitment Status (up to period 1)



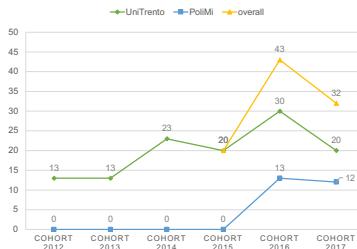
## MS students' trend



## Student Category Distribution in the last 2 years

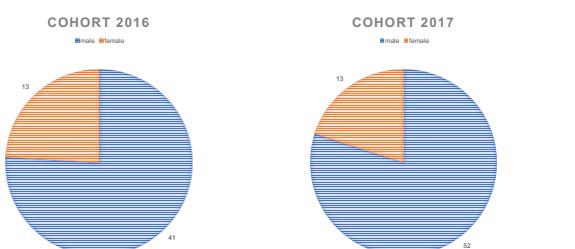


## EU Student Trend in Italy

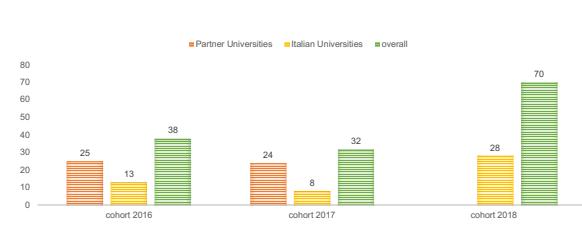


- Possible reasons of fluctuation:
- More Opportunities
  - New programs

## Gender Distribution



## Students with Italian Bachelor Degree



## Italian Node - marketing activities



### Local recruitment actions

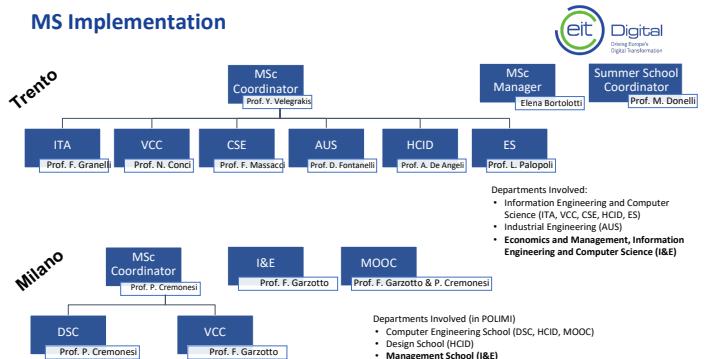
- Trento:
  - 28 Feb. 2018: Presentation of MSL to students (Period 2) @U. of Trento
  - 13 Mar. 2018: Presentation of MSL at ICT Days – Career Fair @Trento CLC
  - 13 & 15 Mar. 2018: Class presentations to DII undergraduate students
  - May 2018 presentation MSL to students (Period 3) @U. of Trento
  - Jun. 2018: Presentation of MSL at major coordinators @U. of Trento
  - Jun.-Sept. 2018: Web/social media campaign
- Milan:
  - Spring'18: Advertisement through institutional channels / social media (e.g. Facebook)
  - 16 May 2018: Presentation of MSL at Career Fair @Poli Milano

### National-level recruitment actions

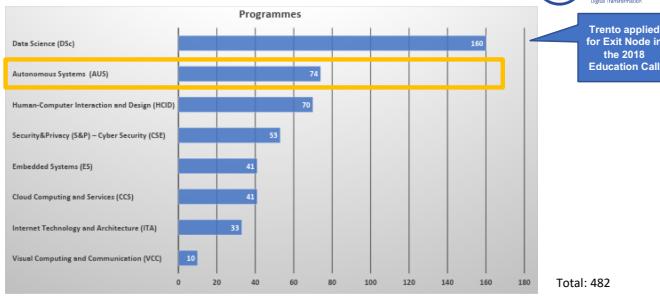
- Opportunities:
  - Leveraging on partner Universities (e.g. U. of Bologna, U. of Genova)
  - External agencies for survey and advertisement
  - Scaling-up via networks of Universities (e.g. CINI)
- Challenges:
  - Roadshows – not very successful in the past
  - National job fairs – career days related to single Universities
  - Poli Milano: Reaching capacity (max 15 students each) very quickly on DSC

13

## MS Implementation



## Overall EIT Submitted Applications 17/18



15

## Success Stories

- Nicola Parrello, Software Developer, **Bunq**, Amsterdam
- Matteo Poletti, Software Engineer, **Google**, Zurich
- Steven Tait, Senior Consultant, **EY**, Milan
- Alessandro Tomasi, Network consultant, **Juniper Networks**, Amsterdam
- Alex Martinelli, Solution Engineer, **IBM Watson**, Dublin



16

## Doctoral School



### Build Industrial Doctoral School

KPI: 15 new IDSL students in 2018

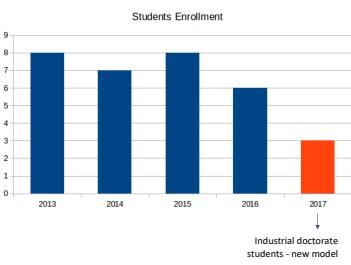
- launch of IDSL in Milan, in collaboration with Poli MI
- define number of seats in Trento & Milan
- ensure the students are coming to the CLC/Satellite
- encourage partners to provide IDSL students



17

## Roster of enrolled PhDs

- 26 active students (32 in total)
- 13 nationalities
- 40% female, 60% male
- 60% EU, 40% non-EU



## Ph.D. students - Industrial Doctorate



3 industrial Doctorate students:

- Engineering co-financing scholarship - Stefano Pio Zingaro (UNIBO) - Nov. 2016  
Digital Cities - Topic: Language-Based Approach for Interoperability in Smart Cities Scenario
- CRF co-financing scholarship - Alice Plebe (UNITN) - Nov. 2017  
Digital Cities - Topic: Deep neural networks for self-driving cars
- TIM co-financing scholarship - Giovanni Pellegrini (UNITN) - Nov. 2017  
Digital Industry - Topic: Constructive Preference Elicitation

## Students achievements in I&E

- 1-st place, "Datathon for Social Good" competition, London, UK (2013)
- Startup Competition Finalist, Smart Energy Systems Idea Challenge, EIT Digital, Berlin, (2014)
- Project 'visitiamo' received honorable mention for social impact at the national contest for innovation in ICT in Italy, Perotto Zucca
- First prize winner at the VT Knowledgeworks Global Student challenge at Virginia Tech (2014)
- 1-st place, Telecom Italia Big Data Challenge, Data Analytics track (2014)
- Finalist to the EIT Digital summer school on intelligent services (2015)
- 2nd position at the StartupLab contest held in Trento (2015)
- Winner of the EIT Digital summer school 2016 "Privacy, Security and Trust" (2016)
- Selected student to participate at the Google NLP Summit for PhD students in Zurich (2017)
- 1st Place (out of 150 participants) at the Football Italian Hackaton, Trento (2017)
- 2nd place on ACM\Microsoft Student Research Competition (2017) ....



## BDExp achievements



2 Ph.D. students developed their business idea during the BDExp:

- Univerius - Pavel Kucherbaev
- FeelSpace - Julia Wache

3 Ph.D. students are about to start their business idea after/during the BDExp:

- StudiObliquo - Zeno Menestrina
- Facify.me - Andrey Bogomolov
- Verilista - Didem Gundogdu

Other startup ideas on the business development phase (ongoing BDExp).

## I&E modules - 2018



Business Model Development - ongoing - (2nd year course, Feb. 20th - May 30th)  
About 160 participants. In collaboration with BDLab and Startup Lab (Master)

In the next months:

Raising Awareness (1st year course, from Nov. 19th to 20th)  
Opportunity Recognition (1st year course, from Dec. 10th to 14th)  
Growth and Harvest (3rd year course, from Sept 24th to Oct. 5th)

## Industrial PhD proposals 2017 -2018



Call 2017

- 9 Ph.D. project proposals (4 Engineering, 2 CRF, 3 Telecom)
- 5 out of 9 Ph.D. proposals approved by the MC
- 2 out of 5 Ph.D. positions assigned (students started in Nov. 2017)

Call 2018 - KPI: 15 Ph.D. Activated positions: 4

- 1 Ph.D. position with CRF - current (1st) UNITN Call for students
- 2 Ph.D. positions with IBM - current POLIMI Call for students
- 1 Ph.D. position with Reply - current POLIMI Call for students
- 5 Ph.D. positions on hold - Engineering, Mapillary Research (non-partner), OSRAM (non-partner)
- Possible interest from Electrolux, GFT, STM, SAP Germany (total 6 possible positions)
- ~ 25 companies on the Digital Cities domain within the EIT Digital network (partner and non-partner) contacted - Comau, ST Microelectronics, Reply, Engineering, BT, Siemens, Dallara, Thales, Pirelli, Maserati, Ferrari, Lamborghini, Enel, ENI, Fastweb, Spindex, Spazio Dati, Algorab, Ericsson, Dedagroup, Zappas, Telecom, ...

## 2018 KPI



### Build Industrial Doctoral School

- KPI: 15 new IDSL students in 2018
- launch of IDSL in Milan, in collaboration with Poli MI
  - define number of seats in Trento & Milan
  - ensure the students are coming to the CLC/Satellite
  - encourage partners to provide IDSL students

- 4 position advertised
- 5 prospect, 4 possible
- hard to achieve the KPI without non-partners

- IDSL in Milan launched (3 positions offered)
- continue to ensure that students use CLC facilities (Trento and Milano)
- continue to promote partners involvement (low response until now)

## Professional School



### Launch Professional School

KPI: 15+ paying participants from Italy

- define the target of seats for the professional school
- define how to encourage partners to provide seats at Professional Schools



25

## Call 2019 proposal - Innovation & Industry 4.0 Professional School



### Activity Purpose

- Methodology and design of innovation lab in Industry 4.0 (I4.0);
- Realistic testbeds to improve student capacity toward effective cooperative work;
- International settings and benchmarking towards integrated innovation I4.0.

### Expected Outcomes and Impact

- The main goal is to implement training modules on transferable hard and soft skills that include competence in Industry 4.0 topics under the technical point of view, and innovation management and entrepreneurial skills.
- The summer school will adopt and develop new formats of unconventional participatory education activities in a dynamic and open environment that involves also local and companies active in the I4.0 area.
- Participants will be involved also in company site visit and immersion.

## Call 2019 proposal - Digital Transformation and Social Challenges



### Activity Purpose

- Enable professionals and companies affected by the digital transformation to become active players
- Modules:
  - Innovation impact and disruption points
  - Moore's law impact in processing, storage, communications
  - From Scarcity to Abundance, from Atoms to Bits, from products to services
  - Symbiotic autonomous systems
  - Robotics/AI
  - Digital transformation in Manufacturing/Retail - supply and distribution value chains
  - Digital transformation in Healthcare, including human augmentation

### Expected Target

- Public administrations and industries in a blended mode

28

## Summer Schools



### Strengthen Summer Schools

KPI: 15+ paying participants from Italy

- define how to encourage partners to provide seats at Summer Schools
- make sure to maintain attractiveness/quality of programs



## Summer School CSP2017



We are now working for the 2018 edition

29

## CSP2017 students evaluation and comments



	Evaluation for	(out of 6)
• facilities:	5.19	
• Information:	5.39	
• Programme:	5.12	
• Lectures:	4.68	
• I&E:	5.21	
• Use cases and coaching:	5.52	

### What did you learn from this experience?

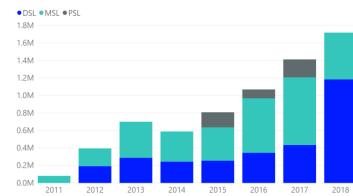
- to get better teamwork and to contribute in the group
- validation is the key
- people skills by working together
- solidification, security issues, Italian culture
- new ways of approaching the business
- basic concepts of security and privacy
- in-depth knowledge of entrepreneurship

30

## Thank you for your attention!

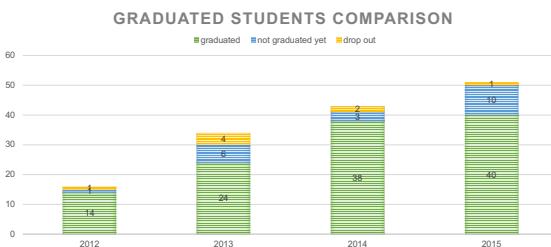
Contact info: Prof. Yannis Velegrakis (velgias@disi.unitn.eu)

 EIT Digital is supported by the EIT,  
a body of the European Union



32

## Graduation / drop-out comparison



33

## Italian Node for 2018 (up to period 1)

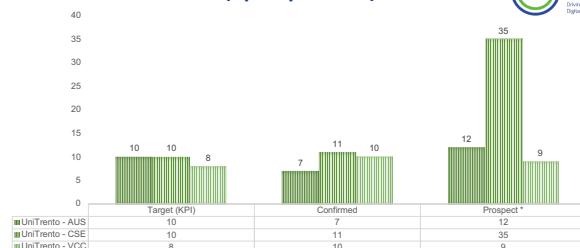
AUS

MSL Recruitment	Target (KPI)	Admitted	Prospects*	Confirmed offer
<b>UNITN</b>				
AUS	10	8	12	7
CSE	10	16	35	11
ITA	10	4	9	4
VCC	8	16	9	10
<b>PoliMI</b>				
DSC	15	6	44	5
HCIID	15	1	17	1
<b>TOTAL</b>	<b>68</b>	<b>51</b>	<b>126</b>	<b>38</b>

(\* ) Selected UNITN or PoliMi  
as their 1st preference entry  
university

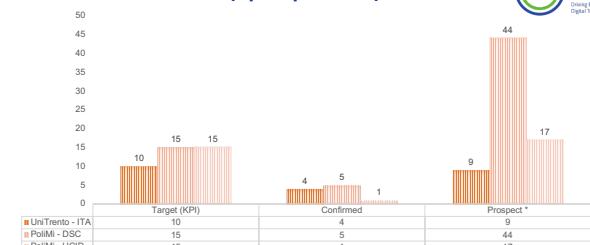
34

## Trento Node for 2018 (up to period 1) - details 1



35

## Trento Node for 2018 (up to period 1) - details 2



(\* ) selected UniTrento or Polimi as their first preference entry university

36

## EU students trend - comments



EU trend on applications has been going up and down since the start of the programme.

The main reasons can be identify in:

- EU generally have good master programme in their own country
- Attractiveness of the MS is determined by topic
- EU students usually look for an MS during late spring / early summer

37

## Recruitment targets for enrolled students



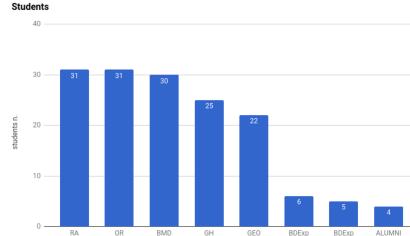
Enrolled	Minimum seats for 2018 Entry												Total	
	Aalto	TU/e	KTH	POLIMI	TU Berlin	UPM	UNS	UPS	TU Delft	UNITN	Utwente	UTU	UPMC	
AUS	10		15		10					10			10	45
CCS	7				15					10	15	10	10	42
CSE													10	45
DSC	25	20	15		15	10								85
ES	25	20		15										60
HCID	15		15	15		10					10			75
ITA			10		10						10			40
VCC			10							15	8			33
Total	32	50	90	30	50	25	10	10	25	38	25	10	10	425

Enrolled	Target numbers to reach seats for 2018 Entry												Total	
	Aalto	TU/e	KTH	POLIMI	TU Berlin	UPM	UNS	UPS	TU Delft	UNITN	Utwente	UTU	UPMC	
AUS	15		15		10					10			15	50
CCS	15				15					10	15	15	15	55
CSE														55
DSC	25	20	15		15	20								95
ES	25	20		15										60
HCID	15		15	15		15		20			10			90
ITA			20	10						10			10	50
VCC			20							15	10			38
Total	45	50	110	30	50	30	20	20	25	40	25	15	10	30

## Students' Careers



- Alumni: 4 students completed all requirements (Roman Chirikov, Teresa Macchia, Julia Wache, Pavel Kucherbaev)
- BDExp: 6 completed, 5 ongoing, 3 about to start
- Only one dropout (received excellent work offer at the end of the PhD, before the BDExp)

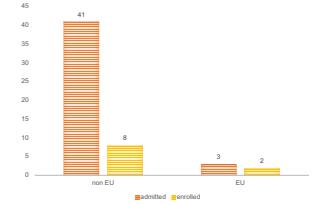


## Applications and arrival issues 2017 cohort (UniTrento only)



- Non-EU students do not arrive because of:
  - Delay in the admission process (communications arrive too late to apply for their VISA)
  - Financial issues related to the new Non-EU scholarship scheme
- EU students do not apply because of:
  - Standard application period and deadlines (too early for decision)
  - The local recruitment period seems to be a good solution to avoid EU decrease

ENTRY STUDENTS' COMPARISON



40

## Autonomous Systems – 2<sup>nd</sup> year



- Real-time perception, decision and control for autonomous driving (UniTN - Trento)
- Robotics and Artificial Intelligence (Aalto - Helsinki)
- Intelligent Autonomous Systems (KTH - Stockholm)
- Applications of Autonomous Systems (TU Berlin)
- Sensing, Communicating and Processing Big Data for IoT (EURECOM - Sophia Antipolis)
- Computer Science for Autonomous Driving (ELTE - Budapest)

41

## I&E Implementation - partner universities



### UniTrento

#### First year

- Innovation & Entrepreneurship Basic – 6 ECTS
- Business Development Laboratory – 9 ECTS
- ICT Innovation – 9 ECTS (4 ECTS Summer School included)

### PoliMi

#### First year

#### Second Year

- Innovation & Entrepreneurship Studies in ICT – 6 ECTS

#### Second Year

## New major on Autonomous Systems Coordinated by Trento

Autonomous Systems is a combination of *computer science* and *mechatronic engineering*.

### Partners:

- University of Trento (**UniTN**), Italy - Coordinator (Entry/Exit)
- Royal Institute of Technology (**KTH**), Sweden (Entry/Exit)
- Aalto University (**Aalto**), Finland (Entry/Exit)
- Technical University Berlin (**TUB**), Germany (Entry/Exit)
- **EURECOM**, France (Exit)
- Eötvös Lorand University (**ELTE**), Hungary (Exit)



43

## Autonomous Systems – 1<sup>st</sup> year

Core competences for the 1<sup>st</sup> year:

- *Robotics*
- *Artificial intelligence or machine learning*
- *Modelling*
- *Estimation*
- *Control*
- *UniTN*, University of Trento, Italy (*Leader*)
- *KTH*, Royal Institute of Technology, Sweden
- *Aalto* University, Finland
- *TU Berlin*, Technische Universität Berlin, Germany

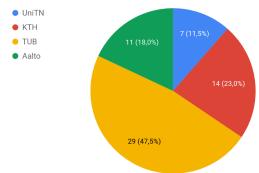


44

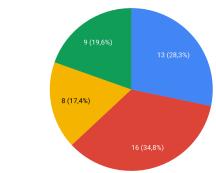
## AUS Entry 2018/2019 per University



### 61 Confirmed students period 1



### 46 Admitted students period 2

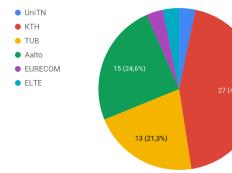


45

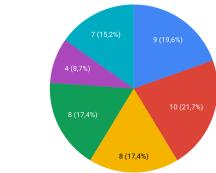
## AUS Exit 2019/2020 per University



### 61 Confirmed students period 1



### 46 Admitted students period 2



46

## Mapping to action line (Old Model, 23 students)

