

**EUROPEAN  
CURRICULUM VITAE  
FORMAT**



**PERSONAL INFORMATION**

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Nationality ITALIAN  
Date of birth MAY 24<sup>TH</sup> 1982

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SCIENTIFIC AND PROFESSIONAL  
CURRICULUM VITAE**

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## PROFESSIONAL AND TEACHING HABILITATION/QUALIFICATION

### Title of qualification awarded

- Dates (from – to)
- Scientific Sector
- Discipline Sector

Name and type of organization  
providing the qualification

### HABILITATION AS ASSOCIATE PROFESSOR (PROFESSORE II FASCIA)

**ACHIEVED: APRIL 10<sup>TH</sup> 2017 – VALID UNTIL APRIL 10<sup>TH</sup> 2023**

ING-IND/15

09/A3 - PROGETTAZIONE INDUSTRIALE, COSTRUZIONI MECCANICHE E METALLURGIA

ASN (Abilitazione Scientifica Nazionale) – Panel of full professors belonging to the Discipline Sector and working as evaluation committee on behalf of the MIUR (Ministero dell'Istruzione, Università e Ricerca – Ministry of Education, University and Research)

### Title of qualification awarded

- Dates
- Name and type of organisation  
providing the qualification
- Level in national classification  
(if appropriate)

### PROFESSIONAL QUALIFICATION AS INDUSTRIAL ENGINEER (SECTION A)

**June - September 2009 (summer session exam)**

Italian Ministry of Education, University and Research

Abilitazione all'esercizio della professione di Ingegnere Industriale (sez. A)

### Title of qualification awarded

- Dates (from – to)
- Name and type of organisation  
providing education and training
- Level in national classification  
(if appropriate)

### PROFESSIONAL QUALIFICATION AS INDUSTRIAL ENGINEER (SECTION B - JUNIOR)

**July 2007 (summer session exam)**

Italian Ministry of University and Research

Abilitazione all'esercizio della professione di Ingegnere Industriale (sez. B - junior)

## WORK EXPERIENCE

- Dates (from – to)
- Name and address of employer
- Type of business or sector
- Occupation or position held
- Main activities and responsibilities

### NOVEMBER 29<sup>TH</sup> 2019 – IN PROGRESS

Politecnico di Milano - Dipartimento di Meccanica

Via privata Giuseppe La Masa, 1

20156 Milano

Italy

Academic Research

#### **Assistant Professor (Ricercatore a tempo determinato tipologia B)**

Research on the topic "Methods and technologies for collaborative inventive design", which concerns integration of conceptual methods and Information and Communication Technologies to study and boost human cognition, especially with reference to the augmentation of creative and inventive thinking abilities for engineers and designers. The research integrates approaches for the investigation of Human Behaviour in design, especially with reference to innovative techniques, including neuro-physiological and other instrumental measures to map human interactions (verbal, gestural, postural) as well as the inherent cognition in collaborative settings. The research takes place both in professional and educational contexts, including their mutual interactions, where relevant. Particular attention is given to different data sources and their nature, applying methods and techniques to process both qualitative and quantitative data with innovative approaches.

The research activity also explores the effect that technologies and methods for design plays in human interactions, considering both the effects on the design process and the design outcomes.

- Dates (from – to)

- Name and address of employer

### FEBRUARY 2<sup>ND</sup> 2015 – NOVEMBER 28<sup>TH</sup> 2019

Politecnico di Milano - Dipartimento di Meccanica

Via privata Giuseppe La Masa, 1

20156 Milano

Italy

- Type of business or sector

Academic Research

- Occupation or position held
- Main activities and responsibilities

#### **Assistant Professor (Ricercatore a tempo determinato tipologia A)**

Research on the topic “Systematic Creative Thinking for Product Innovation”, which concerns the study and implementation of methods and ICT tools for enhancing the creative thinking abilities and the inventive skills of engineers and designers. Most of the research focuses on the activities of the SPARK project, which has the overall goal of developing a Spatial Augmented Reality platform to support co-creative design (creative design in collaborative sessions) with various stakeholders – details afterwards. Part of the research also deals with the identification of relevant methods and tools to support creativity to be embedded into Computer-Aided Design systems (see next section: Work experience in funded projects).

Part of the research also deals with the development of an ICT platform to support E-learning for Innovative Product Development (carried out within the ELPID project – details afterwards). Additional research carried out to explore, analyse and study Human Behaviour in Design in both educational and professional contexts, with the purpose of clarifying the main elements fostering design creativity in individuals and groups when supported by ICT means. This kind of activity is carried out both with traditional approaches (collection and analysis of qualitative – observational- data) and innovative ones (collection and analysis of bio-physiological data).

- Dates (from – to)

- Name and address of employer

#### **APRIL 2019 – FEBRUARY 2020**

Università Libera di Bolzano – Frei Universitet Bozen  
Piazza Università, 1  
39100 Bolzano - Bozen  
Italy

- Type of business or sector
- Occupation or position held

Academic Education and Research

#### **Contract Professor for the class “Technical Drawing – CAD” (upon authorization of Politecnico di Milano)**

- Main activities and responsibilities

More specific details are available in the next sections ([Work Experiences in Educational Activities](#))

- Dates (from – to)

- Name and address of employer

#### **APRIL 2015 – JULY 2015**

EIT – European Institute of Innovation and Technology  
Budapest Infopark  
E Building, Neumann János u., 1117  
Budapest - Hungary

- Type of business or sector
- Occupation or position held

Research and Innovation

#### **Reviewer for European Projects as Innovation Expert (transdisciplinary expert)**

- Main activities and responsibilities

Assessment of the 2014 Grant Agreement Reporting of the Knowledge and Information Communities supported by the EIT

- Dates (from – to)

- Name and address of employer

#### **FEBRUARY 2013 - JANUARY 2015**

Politecnico di Milano - Dipartimento di Meccanica  
Via privata Giuseppe La Masa, 1  
20156 Milano  
Italy

- Type of business or sector
- Occupation or position held

Academic Research

#### **Post Doc/Research Fellow**

- Main activities and responsibilities

Research grant on the topic: “Anticipation of technological scenarios for domestic appliances” (Original Italian title of the research grant: “Anticipazione di scenari tecnologici in ambito elettrodomestici”). The research focused on modelling techniques to support the description of technical systems to support forecasting activities as well as the implementation of appropriate methodologies to support forecasting in Industrial contexts, based on methods and tools leveraging qualitative and quantitative data. Most of this research concerns the activities of the FORMAT Project (see next section: “Work experience in funded projects”)

- Dates (from – to)

- Name and address of employer

#### **ACADEMIC YEAR 2010/11 - IN PROGRESS**

Politecnico di Milano – School of Industrial and Information Engineering  
Via privata Giuseppe La Masa, 1  
20156 Milano

- Type of business or sector Italy
  - Occupation or position held Academic Research
  - Main activities and responsibilities **Contract Professor and Teaching Assistant for various classes**  
More specific details are available in the next sections ([Work Experiences in Educational Activities](#))
- Dates (from – to) **SEPTEMBER 2014 - JANUARY 2015 (4 MONTHS)**
  - Name and address of employer Whirlpool Europe (Italy)  
Via Aldo Moro 5  
Cassinetta di Biandronno (VA)  
Italy
  - Type of business or sector Manufacturing of White goods (Domestic appliances)
  - Occupation or position held **Seconded (from Politecnico di Milano) Experienced Researcher for the FORMAT Project (Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305):**
  - Main activities and responsibilities Application of the FORMAT Methodology, Development of the case studies, Development of handbook contents, Project manager of an industrial pilot case study, Dissemination of scientific results. Transfer of Knowledge (ToK) activities.
- Dates (from – to) **MARCH 2014 - MAY 2014 (3 MONTHS)**
  - Name and address of employer PNO Consultants  
De Kleetlaan 5 b6  
Diegem (Mechelen)  
Belgium
  - Type of business or sector Grants and Innovation Consultancy
  - Occupation or position held **Seconded (from Politecnico di Milano) Experienced Researcher for the FORMAT Project (Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305):**
  - Main activities and responsibilities Development of FORMAT handbook contents, Dissemination of scientific results. Transfer of Knowledge (ToK) activities
- Dates (from – to) **OCTOBER 2013 - JANUARY 2014 (3 MONTHS)**
  - Name and address of employer Whirlpool Europe (Italy)  
Via Aldo Moro 5  
Cassinetta di Biandronno (VA)  
Italy
  - Type of business or sector Manufacturing of White goods (Domestic appliances)
  - Occupation or position held **Seconded (from Politecnico di Milano) Experienced Researcher for the FORMAT Project (Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305):**
  - Main activities and responsibilities Development of the FORMAT Methodology, Development of the case studies, Dissemination of scientific results. Transfer of Knowledge (ToK) activities
- Dates (from – to) **APRIL 2013 - JUNE 2013 (3 MONTHS)**
  - Name and address of employer PNO Consultants  
De Kleetlaan 5 b6  
Diegem (Mechelen)  
Belgium
  - Type of business or sector Grants and Innovation Consultancy
  - Occupation or position held **Seconded (from Politecnico di Milano) Experienced Researcher for the FORMAT Project (Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305):**
  - Main activities and responsibilities Development of the FORMAT methodology, Transfer of Knowledge (ToK) activities.
- Dates (from – to) **FEBRUARY 2011 - JANUARY 2013**
  - Name and address of employer Politecnico di Milano - Dipartimento di Meccanica  
Via privata Giuseppe La Masa, 1  
20156 Milano  
Italy
  - Type of business or sector Academic Research

- Occupation or position held
- Main activities and responsibilities

#### **Research Fellow**

Research grant on the topic: "Technology Forecasting - Identification and evaluation of innovative manufacturing technologies for domestic appliances" (Original title, in Italian: "Technology forecasting: individuazione e valutazione di tecnologie di processo innovative per la produzione di elettrodomestici")

- Dates (from – to)

#### **JULY 2009 - JANUARY 2011**

- Name and address of employer

Politecnico di Milano - Dipartimento di Meccanica  
Via privata Giuseppe La Masa, 1  
20156 Milano  
Italy

- Type of business or sector
- Occupation or position held

Academic Research

#### **Research Fellow**

- Main activities and responsibilities

Research grant on the topic: Innovative technologies for domestic appliances aiming to the reduction of energy and water consumptions" (Original title, in Italian: "Tecnologie innovative in ambito elettrodomestici da cucina per la riduzione del consumo di energia e acqua")

- Dates (from – to)

#### **MARCH 2003 - MARCH 2014**

- Name and address of employer

Self Employed @ Beca Service di Niccolò Becattini c/o  
Viale Aleardo Aleardi 2/B  
50124 Firenze  
Italy

- Type of business or sector
- Occupation or position held

Agency Agreement (Food sector)

#### **Trade agent**

- Main activities and responsibilities

Contract management, Definition of commercial offers, Coordination of trade agents, Management of orders to regularly feed the consumers (Stockists, Wholesale dealers, Supermarket central offices, ...).

- Dates (from – to)

#### **DECEMBER 2003 - JANUARY 2004**

- Name and address of employer

Orso Bruno S.r.l

- Type of business or sector
- Occupation or position held

Restaurant

**Waiter at the counter** c/o Il Lupo Restaurant - Centro Commerciale I Gigli - Campi Bisenzio - FI

- Main activities and responsibilities

Counter Preparation, Guests welcome, Taking and delivering orders, Customers' payment management.

- Dates (from – to)

#### **JULY 2000**

- Name and address of employer

Centro Storico S.r.l

- Type of business or sector
- Occupation or position held

Restaurant

**Waiter** c/o restaurant Acqua al 2 - Firenze - Italy

- Main activities and responsibilities

Room setting, Guests welcome, Taking and delivering orders.

### **WORK EXPERIENCE IN FUNDED NATIONAL AND INTERNATIONAL PROJECTS**

#### **Project Name**

**INDUSTRIA 2015 – "SVILUPPO DI SISTEMA INTEGRATO DI NUOVI ELETTRODOMESTICI A RIDOTTO CONSUMO ENERGETICO" (GREEN KITCHEN)**

- Starting date
  - Duration
- Name of the funding body
  - Funding action
- Grant Agreement number
  - Total Budget
  - Project website

July 2009 (starting date of the work carried out by Niccolò Becattini)

8 MONTHS

Ministero dello Sviluppo Economico – Governo Italiano

Industria 2015 – Bando Efficienza energetica – B.5.2

N/A

N/A

N/A

- Brief Project Description The project aimed at envisioning and developing an integrated system of appliances to be used in domestic contexts in order to reduce significantly the use of water and energy, by means of the implementation of both incremental and radical innovations. The project aimed at introducing eco-efficient solutions for each of the domestic appliances and finding opportunities for water and energy sharing within the appliances connected into an integrated system
- Role in the project Niccolò Becattini carried out activities within the boundaries of Work Package 1 (Vision e Architettura globale – Vision and Global Architecture) and in details he actively generated outcomes and deliverables for the following tasks:
  - Individuazione delle tecnologie più innovative disponibili a breve/medio/lungo termine per la riduzione dei consumi energetici nell’ambito dei materiali e della meccanica (Task 1.2) – [English translation: Identification of the most innovative technologies for the reduction of energy consumptions within materials and production that are/can become available in the short/medium/long term]
  - Definizione di scenari (Task 1.7) – [English Translation: Definition of scenarios]
  - Identificazione di nuove funzionalità e delle relative tecnologie (Task 1.8) – [English Translation: Identification of new functionalities/features and related technologies]

**Project Name**

**OPEN-IT: SISTEMA INFORMATICO DI SUPPORTO ALLE PICCOLE E MEDIE IMPRESE NELL’INNOVAZIONE SISTEMATICA BASATO SU UN PARADIGMA APERTO DI INNOVAZIONE” (IT TOOL TO SUPPORT SMES IN SYSTEMATIC INNOVATION, BASED ON A STRUCTURED METHODOLOGY AND AN OPEN INNOVATION PARADIGM)**

- Starting date January 2010
- Duration 18 MONTHS
- Name of the funding body Regione Toscana
- Funding action POR CReO FESR 2007-2013 – Linea 1.5b, bando progetto Europeo ERA-SME
- Grant Agreement number N/A
- Total Budget N/A
- Project website <http://smeinnovention.net/openit/home.seam> (not available anymore)
- Brief Project Description The project aimed at the development of a web-based platform to support open innovation practices within the SMEs. The Open-IT platform aggregated different modules that supported knowledge extraction from experts to facilitate them during the analysis of technical problems, so that the key element preventing the implementation of solutions could emerge. The Open-IT platform also supported the search for external knowledge (within the open innovation paradigm) by supporting online searches in patent repositories, by means of meaningful queries.
- Role in the project Niccolò Becattini contributed to the WPs and tasks that Politecnico di Milano – Dipartimento di Meccanica was in charge of. In details he co-worked with the whole consortium for the following activities:
  - Analysis of SME’s Innovation requirements
  - Analysis of the state of the art for methods and tools to be implemented in the platform
  - Development of the methodology to be integrated into the platform and validation criteria
  - Application and validation of the methodology with non-consortium entities

**Project Name**

**FORMAT – FORECASTING AND ROADMAPPING FOR MANUFACTURING TECHNOLOGIES**

- Starting date JANUARY 1<sup>ST</sup> 2012
- Duration 48 MONTHS
- Name of the funding body European Union
- Funding action FP7 - PEOPLE - Marie Curie Actions – IAPP (FP7-PEOPLE-2011-IAPP)
- Grant Agreement number 286305
- Total Budget € 1.690.454,00
- Project website <http://www.format-project.eu> (more details available here)
- Brief Project Description The FORMAT project aimed at developing an innovative Forecasting Methodology supporting decision making in Manufacturing Industries.  
The final FORMAT project result is an innovative forecasting methodology, backed by a web semantic IT tool, supporting decision making in Industrial Processes. The methodology, as well

as the semantic tool, have been evaluated in real industrial test cases and extensively described in the FORMAT handbook and through an IT demonstrator to proof the concept.

Role in the project  
Niccolò Becattini was one of the key people (from the Politecnico di Milano team) that took part in the project execution since the very beginning. He joined the project as Early Stage Researcher (ESR) and concluded with the role of Experienced Researcher (ER). He worked on most of the Work Packages of the project with the following responsibilities:

- Identification and critical review of the state of the art
- Definition of the methodology
- Planning, writing, editing and reviewing of project deliverables
- Execution of trials and field tests together with companies within and outside the consortium
- Transfer of Knowledge activities within the consortium as for the IAPP
- Dissemination of the projects results to different audience with the following contributions: contents for the website, scientific papers, public presentations.
- Planning, writing, editing and reviewing of the FORMAT handbook
- Planning and organization of meetings, conferences and events.

**Project Name** **SPARK – SPATIAL AUGMENTED REALITY AS A KEY FOR CO-CREATIVITY**

- Starting date JANUARY 1<sup>ST</sup> 2016
- Duration 36 MONTHS
- Name of the funding body European Union
- Funding action Horizon 2020 (H2020 – ICT – 2015 – CREATIVITY)
- Grant Agreement number 688417
- Total Budget € 3.180.242,50
- Project website <http://www.spark-project.net>

Brief Project Description

The SPARK project aims at realizing a responsive and intuitive ICT platform that exploit the potential of Spatial Augmented Reality (SAR) to show designers and customers real-like solutions in the form of mixed prototypes (partially virtual and partially physical) during co-creative design sessions. The platform is continuously under experimental testing. Results from the experiments demonstrate the effectiveness of the platform in: (1) reducing the time needed for generating ideas, (2) reducing the amount of creative SME's human resources on a single project (so as to allow them to manage more projects), (3) reducing the workload of the people involved in the brainstorming sessions and (4) increasing the efficiency of the whole design process, by enhancing the direct feedback by the customers on the solution of the design task.

Role in the project

Niccolò Becattini participated to the ideation of the project concept, the search for project partners to join the consortium and the preparation of the workplan and the whole project proposal that got evaluated (15/15) and funded by the EU.

Since the beginning of the project he has the role of **Assistant Project Coordinator**. Within the 8 WPs he has been involved in all of them except one. Here a list of its main responsibilities and contributions during the project follows:

- Planning of Task activities and Coordination of some of them.
- Design and execution of experimental protocols to study design creativity in collaborative environments
- Identification and selection of the experimental equipment to conduct behavioural studies in relevant and in real operational environment within an affordable budget, responsible for purchase and equipment testing (Lab installed at Politecnico di Milano)
- Development of effective and coherent metrics, strategies and protocols to process qualitative behavioural data on co-design creativity and generate quantitative results for further analysis, quicker than other state of the art approaches, with no or poor loss of reliability and repeatability.
- Planning, writing, editing and reviewing of project deliverables
- Coordination of 11 external collaborators involved in the execution of project activities on behalf of the consortium
- Dissemination of the projects results to different audience with the following contributions: contents for the website, scientific papers and technical paper, public presentations.
- Communication of project related activities and main outcomes through social media channels (generation of contents), planning of and active participation in public events, demos, showcases and workshops...

- Planning and organization of meetings and events.
- Definition of the policy for the management of project related data, main author of the Data Management Plan
- Co-developer of a business model to make the outcome of the SPARK project sustainable and profitable after the end of the duration of the project itself, in collaboration with other consortium partners.
- Reporting project consortium meetings
- Defining and planning the agenda of consortium meetings together with the Project Coordinator and relevant involved partner
- Defining and planning the agenda of WP/Task meetings with colleagues and partners within the consortium.
- Participating in Consortium Meetings, ESB and Innovation Management Board Meetings (live and VoIP).
- Building solid relationships among the consortium partners

<b>Project Name</b>	<b>ELPID – E-LEARNING PLATFORM FOR INNOVATIVE PRODUCT DEVELOPMENT</b>
<ul style="list-style-type: none"> <li>• Starting date</li> </ul>	November 2018 – in progress
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Duration</li> </ul> </li> </ul>	36 MONTHS
<ul style="list-style-type: none"> <li>• Name of the funding body</li> </ul>	European Union
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Funding action</li> </ul> </li> </ul>	Erasmus + Programme - Knowledge Alliances
<ul style="list-style-type: none"> <li>• Grant Agreement number</li> </ul>	2018-1-HR01-KA203-047486
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Total Budget</li> </ul> </li> </ul>	248.700,00€
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Project website</li> </ul> </li> </ul>	<a href="http://www.elpid.org">http://www.elpid.org</a>
<ul style="list-style-type: none"> <li>• Brief Project Description</li> </ul>	The project aims at enhancing existing e-learning infrastructure in PBL courses and to develop a methodology for its customisation and implementation to other courses as well. The e-learning infrastructure would embrace existing Web and other ICT technologies that can facilitate technical and non-technical knowledge and information exchange and foster creativity and problem-solving in virtual project-based learning courses.
<ul style="list-style-type: none"> <li>• Role in the project</li> </ul>	Niccolò Becattini contributed to the management of the project activities on the side of Politecnico di Milano. He supervised the group of 6 students who participated in the first year of project activities and coached a group of 8 students (2 from Politecnico di Milano, 2 from University of Zagreb [Croatia], 2 from University of Ljubljana [Slovenia] and 2 from TU Wien [Austria]) for the Project Based Learning (PBL) activities, thus including the final 1-week workshop held in Ljubljana, together with BSH (Bosch Siemens Hausgerate). <u>Niccolò Becattini also contributed to the development of teaching materials for the class (topics: Design Creativity, Conceptual Design, Embodiment Design) and to the development of the ICT e-learning platform.</u>

## WORK EXPERIENCE IN EDUCATIONAL ACTIVITIES

<ul style="list-style-type: none"> <li>• Dates (from – to)</li> </ul>	<b>AUGUST 2019</b>
<ul style="list-style-type: none"> <li>• Name and address of employer</li> </ul>	Universidad Tecnica Federico Santa Maria – UTFSM (Chile)
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Type of business or sector</li> </ul> </li> </ul>	Academic Research and Education
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>• Occupation or position held</li> </ul> </li> </ul>	Invited Professor – Visiting
<ul style="list-style-type: none"> <li>• Main activities and responsibilities</li> </ul>	<i>The visit has been held to foster the research collaboration with UTFSM on the development of Design Methods and Tools both in Educational and Industrial contexts, with a focus on methods to foster Design Creativity. Within the visit Niccolò Becattini held two seminars on the theme of Design Creativity for both Students and Professionals, entitled “Innovation by Design Creativity - Nurturing the skills that made Leonardo da Vinci a genius”. The workshops took place at the San Joaquin campus in Santiago del Chile (August 12<sup>th</sup>) and at the Casa Central campus in Valparaiso (August 14<sup>th</sup>) – 65 people (overall) attended the workshop organized by the Department of Ingenieria en Diseno de Producto – Universidad Tecnica Federico Santa Maria and learned about the main dimensions that characterize design creativity and the main skills that are necessary to generate ideas that have higher chances of becoming resilient innovations as soon as they approach the market.</i>



- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

### MARCH 2016

Universidad Tecnica Federico Santa Maria  
Academic Research and Education  
Invited/Visiting expert

*The visit has been held within the 4<sup>th</sup> Pillar of “Proyecto Ingenieria 2030 – Building a World Class Organization, Structure and Community” and specifically for the programme “New Model of Governance, management and structure at UTFSM”. It aimed at fostering the international research collaboration between UTFSM and Politecnico di Milano and transferring the best practices for Industry-Academia partnership. Within the visit, Niccolò Becattini held an international workshop for professors and directors of research on the theme “Industry-Academia Relationships”. The workshop, entitled “Systematic Thinking for Product Innovation”, focused on the model to transfer academic research outcomes into the industrial context that has been successfully implemented by the professors and researchers of Politecnico di Milano. The participants learnt how the research outcomes get progressively consolidated through academic validation and early adoption in partner industries before they get spread at large through the Centre of Competence on Systematic Innovation (fostered by Fondazione Politecnico di Milano).*

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

### SEPTEMBER 2010 – IN PROGRESS

Politecnico di Milano - Fondazione Politecnico  
Research Dissemination and Technology Transfer  
Expert trainer

*Niccolò Becattini is one of the expert members of the Italian Competence Center for Systematic Innovation ([www.innovazione sistematica.it](http://www.innovazione sistematica.it)), a joined initiative of Fondazione Politecnico, Politecnico di Milano, University of Bergamo, University of Florence, PIN Scrl –Servizi didattici e scientifici per l'Università di Firenze and Ceris-Cnr.*

*Joint research activities, consulting and/or training for (among the others):*

- Archa (Laboratorio Archa) - Chemical Analyses, Research, Training
- ARTEFICE Brand Design – Packaging Design – **PARTNERSHIP in EU projects**
- Atlas Copco - Tools and equipment for industrial engineering
- B&C Speakers - Loudspeaker transducer manufacturers
- CCIAA Treviso - Chamber of Commerce of the province of Treviso
- CISITA - Industry and Craftmanship associations’ agency for professional training
- Componenti Vending – Electro-mechanic devices for vending machines
- DrWolf - ICT systems, Information management – **PARTNERSHIP in National projects**
- EDI Progetti - Engineering Design company
- Fratelli Mauri – Work hardening of metal wires (fasteners)
- Fluid-o-Tech – Electromechanic components for fluid processing machines
- GEA Procomac – Aseptic filling plants;
- John Bean Technologies JBT FoodTech - Food processing plants
- PNO Consultants (Belgium) - Grants and innovation consultancy
- Rold Group – Electro-mechanic devices for household appliances;
- STIMULO Design – Product Design – **PARTNERSHIP in EU projects**
- Synthema S.r.l. – Technologies for Natural Language Processing – **PARTNERSHIP in National projects**
- Unox – Professional ovens for cooking;
- VISEO – Software development and related services – **PARTNERSHIP in EU projects**
- Whirlpool – Household appliances – **PARTNERSHIP in National projects**

*He has been involved in several projects and professional education plans as educator/teacher/mentor:*

- Piano Fondimpresa 2018 (with Elettrotecnica ROLD s.r.l)
- Ecosistema innovazione Lecco (with Fratelli Mauri)

- Dates (from – to)
- Name and address of employer

### JANUARY 2015 – IN PROGRESS

Politecnico di Milano - Dipartimento di Meccanica

- Type of business or sector
- Occupation or position held
- Main activities and responsibilities

#### Academic Research

#### Supervisor and Co-Supervisor of students (BS, MS, PhD in Mechanical Engineering)

Supervisor for thesis works of the following students of the **BS in Mechanical Engineering**

- **Iori Gregorio** – BS thesis entitled “*Confronto tra fluidi refrigeranti destinati ad un impianto frigorifero*” – AY 2015/16
- **Piemonte Giulio** – BS thesis entitled: “*Progettazione di una dima per il collaudo di un caricatore plurimandrino*” – AY 2016/17
- **Bortoli Andrea** - BS thesis entitled: “*Progettazione di un collegamento albero motore-biella tramite l'impiego di un cuscinetto liscio*” - AY 2016/17
- **Venturino Diego**– BS thesis entitled: “*Tavole ricambio e analisi del gruppo C.S.T.*” – AY 2017/18
- **Natalucci Luca** – BS thesis entitled: “*Progettazione di protezioni antiflucco per dispositivi di controllo in impianti petrolchimici*” - AY 2018/19
- **Croce Alberto** – BS Thesis entitled: “*Analisi per la messa in opera e l'esercizio di una linea produttiva per prove in laboratorio*” - AY 2018/19)
- **Cimmarusti Mirko Giuseppe** – Thesis in Progress (expected conclusion AY2018/19)
- **Marco Martinelli** – BS Thesis entitled: “*Retrofitting di una dentatrice (industriale) per automazione di processi produttivi*” - AY2019/20
- **Alessandro Pellicani** – BS Thesis entitled: “*Progettazione di sistemi meccanici e analisi del processo di sviluppo*” - AY2019/20
- **Botti Albino Federico** – BS Thesis Entitled: “*L'arte di fare il gelato*” – AY 2019/20
- **Geri Fila** – BS Thesis in Progress – expected conclusion March 2021

Supervisor for the thesis works of the following student of the MS in Mechanical Engineering

- **Luca Alberio** – MS Thesis in Progress (interim title: “*automated analysis of interactions in collaborative design settings from the analysis of audio recordings*”)

Co-supervisor for thesis works of the following students of the **MS in Mechanical Engineering**

- **Tito Begnoni** – MS thesis entitled: “*Coding Procedures for the Analysis of Co-Design Protocols within the SPARK Project*” – AY 2016/17
- **Nicolas Carbone** – MS thesis entitled: “*FAST DESIGN PROTOCOL ANALYSIS (FDPA) THROUGH LOG FILE PROCESSING*” – AY 2016/17

Assistantship for thesis works of the following students of the **PhD School in Mechanical Engineering**

- **Sara Saliminamin**: PhD Thesis entitled: “*Serious game for the next generation of technical systems. To improve the capabilities of R&D engineers in proposing ideas for the next generations of technical systems*” (2017)
- **Mehdi Parvin**: “*Improving ideas novelty based on OTSM-TRIZ model of contradiction*” (2017)
- **Lizhen Jia**: PhD in progress, thesis title to be defined – expected conclusion late 2019

Co-supervisor for thesis works of the following students of the **PhD School in Mechanical Engineering**

- **Shumin Li**: PhD in progress, thesis title to be defined – expected conclusion late 2020
- **Niccolò Batini**: PhD in progress, thesis title to be defined – expected conclusion late 2023

#### List of classes as LECTURER (Also upon recruitment calls based on professional qualifications and teaching experiences)

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

#### ACADEMIC YEAR 2020/2021

Politecnico di Milano – School of Industrial and Information Engineering

Academic Education and Research

Contract Professor - Lectures in Italian (Class to start February 2021)

Professor of **Laboratorio di Progettazione Meccanica A** (English translation: **Mechanical Design Laboratory A**) (4 CFU - 40 hours). Course within the BS in Mechanical Engineering Piacenza Campus

- Dates (from – to)
- Name and address of employer
  - Type of business or sector

#### ACADEMIC YEAR 2020/2020

Politecnico di Milano – School of Industrial and Information Engineering

Academic Education and Research

- Occupation or position held
  - Main activities and responsibilities
- Contract Professor - Lectures in Italian (Class to start September 2019)  
Professor of **Prova Finale** (English translation: **Final Multidisciplinary Project**) (3 CFU - 40 hours). Course within the BS in Mechanical Engineering Piacenza Campus
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- ACADEMIC YEAR 2020/2021**  
Politecnico di Milano – School of Design  
Academic Education and Research  
Professor - Lectures in Italian  
Professor of **Laboratorio di Rappresentazione Digitale** (English translation: **Digital Representation Lab**) (12CFU) as responsible of the whole class. Within this class, lectures on **Modellazione Virtuale di Prodotto** (English translation: **Product Virtual Modeling**) (6 CFU/ECTS) (60 ore). Course within the Bachelor on Design della Moda (Fashion Design)
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- ACADEMIC YEAR 2020/2021**  
Politecnico di Milano – School of Industrial and Information Engineering  
Academic Education and Research  
Professor - Lectures in Italian  
Professor of **Metodi di Rappresentazione Tecnica** (English translation: **Methods of Technical Representation**) (7CFU). Course within the BS in Aerospace, Energy and Mechanical Engineering.
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- ACADEMIC YEAR 2019/2020**  
Politecnico di Milano – School of Industrial and Information Engineering  
Academic Education and Research  
Contract Professor - Lectures in Italian  
Professor of **Laboratorio di Progettazione Meccanica A** (English translation: **Mechanical Design Laboratory A**) (4 CFU - 40 hours). Course within the BS in Mechanical Engineering Piacenza Campus
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- ACADEMIC YEAR 2019/2020**  
Politecnico di Milano – School of Design  
Academic Education and Research  
Professor - Lectures in Italian  
Professor of **Laboratorio di Rappresentazione Digitale** (English translation: **Digital Representation Lab**) (12CFU) as responsible of the whole class. Within this class, lectures on **Modellazione Virtuale di Prodotto** (English translation: **Product Virtual Modeling**) (6 CFU/ECTS) (60 ore). Course within the Bachelor on Design della Moda (Fashion Design)
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- APRIL 2019 – FEBRUARY 2020 (ACADEMIC YEAR 2018/19)**  
Libera Università di Bolzano – Frei Universitet Bozen  
Academic Education and Research  
Contract Professor – Lectures in English (Nullaosta/authorization provided by Politecnico di Milano)  
Professor of **Technical Drawing - CAD** (3 CFU/ECTS) (30 ore). Course within the Bachelor of Science on Wood Engineering – Elective course for the students of the BS in Mechanical Engineering
- Dates (from – to)
  - Name and address of employer
    - Type of business or sector
    - Occupation or position held
  - Main activities and responsibilities
- ACADEMIC YEAR 2018/19**  
Politecnico di Milano – School of Design  
Academic Education and Research  
Contract Professor – Lectures in Italian  
Professor of **Laboratorio di Rappresentazione Digitale** (English translation: **Digital Representation Lab**) (12CFU) as responsible of the whole class. Within this class, lectures on

**Modellazione Virtuale di Prodotto** (English translation: **Product Virtual Modeling**) (6 CFU/ECTS) (60 ore). Course within the Bachelor on Design della Moda (Fashion Design)

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**ACADEMIC YEAR 2017/18**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Education and Research  
Contract Professor – Lectures in Italian

Professor of "**Laboratorio Progettuale CAD** (English translation: **CAD Lab**) (7 CFU/ECTS) (100 ore). Course within the Bachelor in Mechanical Engineering (3rd year)

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**FEBRUARY 2017 AND JUNE 2017**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Education and Research  
Contract Professor – Lectures in Italian

Lectures for the **tutoring course** (16 hours + 16 hours) on **Metodi di Rappresentazione Tecnica** (English translation: **Methods for Technical Representation**) (7 CFU/ECTS) - Course within the Bachelor of Science in Mechanical Engineering; Energy Engineering and Aerospace Engineering.

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**FEBRUARY 2016 AND MAY – JUNE 2016**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Education and Research  
Contract Professors – Lectures in Italian

Lectures for the **tutoring course** (14 hours + 14 hours) on **Metodi di Rappresentazione Tecnica** (English translation: **Methods for Technical Representation**) (7 CFU/ECTS) - Course within the Bachelor of Science in Mechanical Engineering; Energy Engineering and Aerospace Engineering..

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**FEBRUARY 2015 AND MAY 2015**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Education and Research  
Contract Professor – Lectures in Italian

Lectures for the **tutoring course** (20 + 20 hours) on **Metodi di Rappresentazione Tecnica** (English translation: **Methods for Technical Representation**) (7 CFU/ECTS) - Course within the Bachelor of Science in Mechanical Engineering; Energy Engineering and Aerospace Engineering.

**List of Classes as TEACHING ASSISTANT**

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**ACADEMIC YEARS FROM 2015/16 – IN PROGRESS**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Research

Teaching Assistant of Prof. Gaetano Cascini – Niccolò Becattini is responsible for practice lectures for module B – Lectures in English

Assistantship for the course on **Methods and Tools for Systematic Innovation B - Problem Solving and Inventive Design (I.C. Module)** (6 CFU/ECTS) (approximately 30 hours). Course within the Master of Science in Mechanical Engineering

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

**ACADEMIC YEARS FROM 2012/13 – IN PROGRESS**

Politecnico di Milano - School of Industrial and Information Engineering  
Academic Research

Teaching Assistant of Prof. Gaetano Cascini - Lectures in Italian

Assistantship for the course on **Metodi di Rappresentazione Tecnica (Methods for Technical Representation)** (7 CFU/ECTS) (78 hours on a total of 104 hours). This includes the Computer-Aided Design Module - 39 hours, for which Niccolò Becattini autonomously delivers

lectures. Course within the Bachelor of Science in Mechanical Engineering; Energy Engineering and Aerospace Engineering.

CAD Software: Solid Edge, Solid Works, Inventor Professional

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

#### **ACADEMIC YEAR 2014/15**

Politecnico di Milano – School of Management

Academic Research

Teaching Assistant of Prof. Sergio Terzi– Lectures in Italian

Assistantship for the course on **Product Lifecycle Management - Computer Aided Design Module** (10 hours) - Course within the Master of Science in Management Engineering  
Software taught: Solid Edge ST7

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

#### **ACADEMIC YEAR 2011/12**

Politecnico di Milano - School of Industrial and Information Engineering

Academic Research

Teaching Assistant – Lectures in Italian

Assistantship for the course on **Methods and Tools for Systematic Innovation** (78 hours) - Part A: Problem Solving and Inventive Design; Part B: Innovation and Intellectual Property Management (12 CFU/ECTS) - Course within the Master of Science in Mechanical Engineering.

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

#### **ACADEMIC YEAR 2010/11**

Politecnico di Milano - School of Industrial and Information Engineering

Academic Research

Teaching Assistant – Lectures in Italian

Assistantship for the course on **Methods for modelling and simulation of product development processes** (5 CFU/ECTS) - Course within the Master of Science in Mechanical Engineering.

- Dates (from – to)
- Name and address of employer
  - Type of business or sector
  - Occupation or position held
- Main activities and responsibilities

#### **ACADEMIC YEARS 2010/11 AND 2011/12**

Politecnico di Milano - School of Industrial and Information Engineering

Academic Research

Teaching Assistant – Lectures in Italian

Assistantship for the course on **Methods for Technical Representation** (7 CFU/ECTS) - Computer-Aided Design Module (26 hours). Course within the Bachelor of Science in Mechanical Engineering; Energy Engineering and Aerospace Engineering.  
Software taught: Solid Edge ST3, Solid Works 2012, Inventor Professional 2012

## **PERSONAL EDUCATION AND TRAINING**

- Dates (from – to)
- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered
  - Title of qualification awarded
  - Level in national classification (if appropriate)

#### **2010-2012 (XXV Cycle)**

Politecnico di Milano - PhD School of Mechanical Engineering

*PhD in Mechanical Engineering concluded with the PhD Dissertation entitled: “Requirements Identification and Characterization in Innovation Processes”. Supervisor: Prof. Gaetano Cascini (Politecnico di Milano); Opponent: Prof. Denis Cavallucci (Institut National des Sciences Appliquées INSA - Strasbourg - France). Final defense of the PhD thesis: March 27th 2013.*

*PhD in Mechanical Engineering (merit)*

Dottorato di ricerca in Ingegneria Meccanica (con merito)

- Dates (from – to)
- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered

#### **AAYY 2006/07-2007/08**

University of Florence (Italy)

*Master of Science in Mechanical Engineering concluded with the thesis entitled: “Network of Contradiction dynamics in the evolution of technical systems - Application to the PDG -*

**Pneumatic Dry Granulation- Technology** (Original title, in Italian: "Dinamica delle reti di contraddizioni nell'evoluzione di sistemi tecnici – Applicazione alla tecnologia PDG (Pneumatic Dry Granulation)"). Supervisors: Prof. Gaetano Cascini, Mech. Eng. Federico Rotini, Mech. Eng. Yuri Borgianni. FINAL GRADE: 110/110 CUM LAUDE

• Title of qualification awarded MS degree in Mechanical Engineering at the University of Florence, Italy received on April 7th 2009.

• Level in national classification (if appropriate) Laurea specialistica - Voto Finale 110/110 con lode accademica

• Dates (from – to) **AY2001/2002-2005/06**  
University of Florence (Italy)

• Name and type of organisation providing education and training Bachelor of Science in Mechanical Engineering concluded with the thesis entitled: "**Smart windows: evolutionary scenarios for doors, windows and related technical systems**" (Original Title in Italian: "Smart Windows: Scenari evolutivi per finestre e serramenti").  
Supervisors: Prof. Gaetano Cascini, Mech. Eng. Davide Russo.

• Principal subjects/occupational skills covered BS degree in Mechanical Engineering at the University of Florence, Italy received on December 6th 2006.

• Title of qualification awarded Laurea triennale

• Level in national classification (if appropriate)

## AWARDS

• Data (da-a) **2018**  
Editorial board of the Journal of Engineering Design

• Nome e tipologia dell'ente che assegna il premio **Reviewer of the year** (based on the continued quality, timeliness and number of reviews during the year)

• Titolo del premio

• Dates (from – to) **February 2018**  
Organizing Committee and Programme committee of the International Conference on Design Creativity 2018 (ICDC18)

• Name and type of organisation providing education and training **Reviewers' Favorite paper** (top 5 papers according to reviewers' evaluation)

• Title of Award

• Level in national classification Not applicable

• Dates (from – to) **August 2014**  
ASME (The American Society of Mechanical Engineers) - Computers and Information in Engineering Division

• Name and type of organisation providing education and training **Best PhD Thesis/Dissertation award**  
International Award - Not applicable

• Title of Award

• Level in national classification

• Dates (from – to) **February 2010**  
APEIRON (The Italian Association for Systematic Innovation)

• Name and type of organisation providing education and training **Best MS Thesis on Systematic Innovation by Apeiron (Italian Association for Systematic Innovation)**  
Premio di laurea triennale Apeiron (2010)

• Title of Award

• Level in national classification

• Dates (from – to) **February 2007**  
APEIRON (The Italian Association for Systematic Innovation)

• Name and type of organisation providing education and training **Best BS Thesis on Systematic Innovation by Apeiron (Italian Association for Systematic Innovation)**  
Premio di laurea triennale Apeiron (2007)

• Title of Award

• Level in national classification

**PERSONAL SKILLS AND  
COMPETENCES**

*Acquired in the course of life and career  
but not necessarily covered by formal  
certificates and diplomas.*

MOTHER TONGUE

**ITALIAN**

OTHER LANGUAGES

**ENGLISH (CERTIFIED BY TRINITY COLLEGE LONDON - DIPLOMA "GRADE 10 – SPOKEN ENGLISH FOR SPEAKERS OF OTHER LANGUAGES" (LEVEL C1/C2 PROFICIENT USER)) MAY 2001**

- Reading skills EXCELLENT
- Writing skills EXCELLENT
- Verbal skills EXCELLENT

**FRENCH (SECONDARY SCHOOL DEGREE – 11/14YO)**

- Reading skills GOOD
- Writing skills BASIC
- Verbal skills BASIC

**SPANISH (NO CERTIFICATION)**

- Reading skills BASIC
- Writing skills BASIC
- Verbal skills BASIC

## **SOCIAL SKILLS AND COMPETENCES**

*Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.*

Capability to work with people from different countries and continents. With reference to the activities carried out along the FORMAT Project ((Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305), the SPARK project (Horizon2020 grant agreement no. 688417) and the ELPID project (Erasmus+ project 2018-1-HR01-KA203-047486) Niccolò Becattini improved his relational and social skills by interacting with people working for the European Universities and companies involved in the projects' consortia:

- Whirlpool Europe (Italy),
- PNO Consultants (Belgium),
- Wroclaw University of Technology (Poland);
- Innovation Engineering (Italy).
- Institut National Polytechnique – INP Grenoble (France)
- University of Bath (UK)
- Artefice Brand Language Design (Italy)
- Stimulo (Spain)
- VISEO (France)
- Antwerp Management School (Belgium)
- University of Zagreb (Croatia)
- University of Ljubljana (Slovenia)
- TU Wien (Austria)
- BSH Bosch Siemens Hausgeraete (Slovenia)

The projects' consortia included members coming from Italy, India, Chile, Belarus, Russia, Poland, Egypt, Mexico, France, UK, Ireland, Belgium, Tunisia, Spain, Croatia, Slovenia, Austria.

**Niccolò Becattini has also nurtured his social skills and competences with reference to his specific research interests within the following conferences and workshops he personally attended:**

- TRIZ Future Conference 2009 (November 4<sup>th</sup>-6<sup>th</sup> -Timisoara, Romania)
- TRIZ Future Conference 2010 (November 3<sup>rd</sup>-5<sup>th</sup> - Bergamo, Italy) – presentation of one original research paper
- TRIZ Future Conference 2011 (November 2<sup>nd</sup>-4<sup>th</sup> - Dublin, Ireland) – presentation of one original research paper
- CAD Conference 2012 (June 11<sup>th</sup>-14<sup>th</sup> - Niagara Falls, Ontario, Canada) – presentation of two original research paper
- International workshop on “Impact of Design Research on Practice (July 22<sup>nd</sup>-23<sup>rd</sup> 2013 - Munchen, Germany)
- DESIGN Conference 2014 (May 19<sup>th</sup>-22<sup>nd</sup>- Cavtat - Dubrovnik, Croatia) – presentation of one original research paper
- TRIZ Future Conference 2014 (October 29<sup>th</sup>-31<sup>st</sup> - Lausanne - Geneve, Switzerland) – presentation of one original research paper
- CAD Conference 2015 (June 2015, Greenwich, London, England) – presentation of one original research paper
- ICED15 - 20<sup>th</sup> International Conference on Engineering Design (July 27<sup>th</sup>-31<sup>st</sup> 2015 - Milan, Italy) – presentation of two original research paper
- DCC16 – 7<sup>th</sup> international conference on Design Computing and Cognition (June 25<sup>th</sup>-30<sup>th</sup>, Northwestern University – Evanston – Chicago, IL – USA) – presentation of one original research paper
- Workshop ADM – ING-IND/15 Scientific Sector at Politecnico di Milano - Italy (February 2017) – presentation of two original research contributions
- ICED17 – 21<sup>st</sup> International Conference on Engineering Design (August 2017 – University of British Columbia – Vancouver, Canada) – presentation of two original research paper
- Workshop ADM – ING-IND/15 Scientific Sector at University of Pisa - Italy (September 2017) – presentation of one original research contributions
- ICDC18 – 5<sup>th</sup> international Conference on Design Creativity (January-February 2018, Bath, England) - presentation of two original research paper
- DESIGN conference 2018 (21<sup>st</sup>-24<sup>th</sup> May – Dubrovnik, Croatia) – Organization and **Co-Chair of one Workshop for the Special Interest Group on Design Creativity**, presentation of one original research paper



- DCC18 – 8th international conference on Design Computing and Cognition (June 30th – July 4th – Lecco, Milano – Italy) – Presentation of one original research poster.
- Workshop ADM – ING-IND/15 Scientific Sector at University of Brescia - Italy (September 2018) – presentation of one original research contributions
- ICED19 – 22<sup>nd</sup> International Conference on Engineering Design (5-8 August 2019 – TU Delft – Delft, The Netherlands) – Presentation of two original research papers, **Co-chair of the workshop by the Design Creativity SIG of the Design Society**, Chair of one Podium session, Chair of one Discussion Session.
- ADM2019 International Conference at University of Modena and Reggio Emilia (September 2019) – presentation of one original research contribution (yet to happen/appear - accepted for presentation and publication at the date of this version of the CV)

## **ORGANIZATIONAL SKILLS AND COMPETENCES**

*Coordination and administration of people, projects and budgets; at work, in voluntary work (for example culture and sports) and at home, etc.*

Capability to coordinate the work of people having different competences and backgrounds in research projects. With reference to the activities carried out along the FORMAT Project (FOrecasting and Roadmapping for MAnufacturing Technologies - Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305) Niccolò Becattini has been managing the activity of a pilot application of the FORMAT methodology on an industrial case study (team size 8 people)

**In 2015, Niccolò Becattini was one of the main proponents and actively participated in the definition of the H2020 proposal for the SPARK project (SPatial Augmented Reality as a Key for co-creativity).** The European Commission's experts rated the proposal with an overall score of 15/15 and then founded the project. Niccolò Becattini took care of the communication with academic partners during the preparation of the proposal, with particular reference to the aspects concerning Design Creativity.

Since January 2016 (project starting date) he is **Assistant Project Coordinator for the SPARK project**. His is also involved as Task leader along some of the project's work packages:

- Definition of the functional and non-functional specification of the SPARK platform (T1.7)
- Experimental activities in relevant operational environments for the assessment of the SPARK platform with reference to competing ICT systems (T4.4.)

Within these activities he has also contributed to equip, with different technical devices (cameras, microphones, software systems), a laboratory to run design experiments under controlled and recorded conditions to study Design Creativity and Human Behaviour in Design

In 2012, Niccolò Becattini became an Executive member of APEIRON (The Italian Association for Systematic Innovation). Since 2013 he has become Secretary within the association, thus including the administration of financial aspects.

He has also collaborated to the organization of the following events as a member of the organizing committee:

- FORMAT Final Conference – “Driving Innovation in Industrial Processes by Technology Forecasting” (May 14-15 2015, Politecnico di Milano, Italy)
- International Conference on Engineering Design 2015 (ICED2015, July 27-31 2015, Politecnico di Milano, Milano - Bovisa, Italy)
- 18<sup>th</sup> Workshop of the International Institute of Forecasters - Forecasting New Products and Services (18<sup>th</sup> WS IIF, May 12-13<sup>th</sup> 2016, Politecnico di Milano, Bovisa, Italy)
- 8<sup>th</sup> Conference on Design Computing and Cognition 2018 (DCC18 June 29-July 3 2018, Politecnico di Milano, Lecco Campus, Italy)

## TECHNICAL SKILLS AND COMPETENCES

*With computers, specific kinds of  
equipment, machinery, etc.*

### Research Topics of Niccolò Becattini

The research activity involves topics and issues of development processes (both product and process) and it mostly concerns theory, methods and tools dedicated to the earliest stages of the design process, where creativity plays a paramount role.

A comprehensive list of research topics and the related publications are reported hereafter (the codes are referred to the full list of publications in the last section of this document – codes in bold refer to the 12 publications required and attached for the evaluation procedure 2019\_RTDB\_DMEC\_6). If one publication relates to more than one of the mentioned research topics, it has been listed in each of the relevant items in the list.

- Development of tools and modules for ICT and Computer-Aided systems in Design (2010- ongoing) [**A1, A2, A3, A4, A5, A6, A10**, C3, C4, C5, C6, C22, C24, C25, C27, D4, D5, D7, D11, D12, D13, D15]
- Heuristics, Creative Stimuli and Checklists for the earliest stages of the design process
  - Based on TRIZ (2010-2018) [**A1, A3, A4, A9**, C2, C9, C11, C12, C17, C18, D2, D3, D8]
  - Based on Bio-inspiration (2015) [**A6**, D13]
  - Based on patent contents (2017-ongoing) [**A11**, C21, C23, D14]
- Engineering Design Education of Students and Professionals (2013-ongoing) [**A4, B1, B2, B3, B4**, C10, C26, D12, D17, D19]
- Technological Forecasting (2009- 2015) [B4, C1, C8, C11, C14, D1, D6]
- Creativity and Cognition in Design
  - Designers' and Co-designers' cognition (2012-ongoing) [**A9, A10, A11**, C5, C10, C13, C22, C23, C25, C27, C28, D15, D16, D18, D19]
  - User's – Evaluator's cognition (2013 - ongoing) [**A7, A8**, C7, C15, C16, C19, C20, D10]

**Consistently with the growing interest of Niccolò Becattini in the above topics, he is and has been also involved in scientific committees with different roles:**

- Member of the Editorial Advisory Board of the International Journal of Design Creativity and Innovation
- Member of ETRIA (European TRIZ Association) (2009-2019)
- Member of the Design Society (2014-ongoing)
- Member of the MIC Conference 2013 (The First International Conference on the Science of Creative Thinking) Technical Program Committee
- Reviewer for the International Journal of Design Creativity and Innovation (2013-ongoing)
- Reviewer for the book "Multidisciplinary contributions to the Science of Creative Thinking".
- Reviewer for the Journal of Engineering Design (2015-ongoing)
- Reviewer for the Journal "SoftwareX" (2016-ongoing)
- Reviewer for the Journal "Symmetry" (2016-ongoing)
- Reviewer for the journal "Manufacturing Letters" (2016-ongoing)
- Reviewer for the ASME's International Mechanical Engineering Congress and Exposition 2018 (IMECE2018)
- Reviewer for the ASME's International Mechanical Engineering Congress and Exposition 2019 (IMECE2019)
- Member of the Scientific Committee of the International Conference on Engineering Design 2015 (ICED2015)
- Reviewer for the International Joint Conference on Mechanics, Design Engineering and Advanced Manufacturing 2016 (JCM 2016).
- Member of the Scientific Committee of the International Conference on Engineering Design 2017 (ICED2017)
- Member of the Scientific Committee of the International Conference on Design Creativity 2018 (ICDC 2018)
- Member of the Advisory Board of the 8<sup>th</sup> Design Computing and Cognition Conference 2018 (DCC18)
- Member of the Scientific Advisory Board of the 20<sup>th</sup> Design Conference (DESIGN2018)

- Member of the International Programme committee for the International Conference on Research into Design (ICoRD'19)
- Member of the Scientific Committee of the International Conference on Engineering Design 2019 (ICED19)
- Member of the Advisory Board of the 9<sup>th</sup> Design Computing and Cognition Conference 2020 (DCC20)
- Member of the Scientific Advisory Board of the 21<sup>th</sup> Design Conference (DESIGN2020)
- Member of the Scientific Committee of the International Conference on Design Creativity 2020 (ICDC 2020)
- Member of the International Programme committee for the International Conference on Research into Design (ICoRD'21)

**Niccolò Becattini's skills also include the use of the following software**

3D Modelling/CAD/Simulation software skills

Expert user of the following CAD systems

- Siemens Solid Edge 2019
- Dassault Systemes Solid Works 2018 SP3 and previous releases
- Autodesk Inventor Professional: v2019 and previous releases
- Dassault Systemes Catia V5
- Dassault Systemes 3DEXperience

Expert User of the following Mechanical Symulation Processors

- Cosmos Works (embedded in Solid Works Dassault Systemes)
- Altair HyperWorks Suite

Office Management software

- MS Office Suite (MS Word, MS Excel; MS Powerpoint, MS Visio)
- OpenOffice and Similar

Scientific software

- MATLAB (executing and programming skills)
- TRANSANA (analysis of qualitative data)
- MiniTab (statistical data analysis)
- SPSS (statistical data analysis)

Coding

- VBA for Excel
- Matlab
- C

Scientific Editing

- LaTeX
  - Professional editing and original production of the graphical contents for the handbook "Fisica per Scienze Biologiche e Ambientali" – Author prof. Angelo Baracca (University of Florence)

Audio/Video Editing

- Adobe Premiere Pro
- FFmpeg

Knowledge Management / IPR Management software

- Matheo Patents
- Orbit/Qpat by Questel

<b>OTHER SKILLS AND COMPETENCES</b> <i>Competences not mentioned above.</i>	January 2010, expert-consultant TRIZ qualification, 3rd grade, Altshuller's criteria by TRIZ Master Alexander Narbut.
<b>DRIVING LICENCE(S)</b>	Italian Driving License type B (Cars)
<b>ADDITIONAL INFORMATION</b>	Nothing relevant for the application worth of mentioning

## LIST OF SCIENTIFIC PUBLICATIONS

### PAPERS ON ISI/SCOPUS JOURNALS

- A1 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“MODEL AND ALGORITHM FOR COMPUTER-AIDED INVENTIVE PROBLEM SOLVING”**, SPECIAL ISSUE ON “FUNDAMENTALS OF NEXT GENERATION CAD/E SYSTEMS” ON COMPUTER-AIDED DESIGN, 44, 2012, PP. 961-986.
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- A10 O'HARE, J., DEKONINCK, E., MOMBESHORA, M., MARTENS, P., BECATTINI, N., & BOUJUT, J. F. (2020). **DEFINING REQUIREMENTS FOR AN AUGMENTED REALITY SYSTEM TO OVERCOME THE CHALLENGES OF CREATING AND USING DESIGN REPRESENTATIONS IN CO-DESIGN SESSIONS.** CoDESIGN, 16(2), 111-134.
- A11 JIA, L., BECATTINI, N., CASCINI, G., & TAN, R. (2020). **TESTING IDEATION PERFORMANCE ON A LARGE SET OF DESIGNERS: EFFECTS OF ANALOGICAL DISTANCE.** INTERNATIONAL JOURNAL OF DESIGN CREATIVITY AND INNOVATION, 8(1), 31-45.
- A12 BECATTINI, N., BORGIANNI, Y., CASCINI, G., & ROTINI, F. (2020). **INVESTIGATING USERS' REACTIONS TO SURPRISING PRODUCTS.** DESIGN STUDIES, 69, 100946.
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- C12 BECATTINI N., CASCINI G.: **“GENERAL-PURPOSE REQUIREMENTS CHECKLIST FOR IMPROVING THE COMPLETENESS OF A DESIGN SPECIFICATION”**, PROCEEDINGS OF THE DESIGN 2014 13<sup>TH</sup> INTERNATIONAL DESIGN CONFERENCE, DUBROVNIK, CROATIA, 19–22 MAY 2014
- C13 BECATTINI N., CASCINI G., ROTINI F.: **“AN OTSM-TRIZ BASED FRAMEWORK TOWARDS THE AUTOMATIC IDENTIFICATION OF COGNITIVE PROCESSES IN DESIGN PROTOCOLS”**,

- C14 PROCEEDINGS OF THE SIXTH INTERNATIONAL CONFERENCE ON DESIGN COMPUTING AND COGNITION (DCC14), 23–25 JUNE 2014, UNIVERSITY COLLEGE LONDON, LONDON, UK  
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- C15 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“AN INVESTIGATION ON FACTORS TRIGGERING SURPRISE”**, SUBMITTED FOR PUBLICATION IN THE PROCEEDINGS OF THE 3<sup>RD</sup> INTERNATIONAL CONFERENCE ON DESIGN CREATIVITY (ICDC14), 12-14 JANUARY 2015, BANGALORE, INDIA
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- C21 PARVIN, M., CASCINI, G., & BECATTINI, N. (2017). **INFORMATION EXTRACTED FROM PATENTS AS CREATIVE STIMULI FOR PRODUCT INNOVATION**. In *INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN 2017* (pp. 297-306).
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- C24 O'HARE, J. A., DEKONINCK, E., GIUNTA, L., BOUJUT, J. F., & BECATTINI, N. (2018). **EXPLORING THE PERFORMANCE OF AUGMENTED REALITY TECHNOLOGIES IN CO-CREATIVE SESSIONS: INITIAL RESULTS FROM CONTROLLED EXPERIMENTS**. In DS92: PROCEEDINGS OF THE DESIGN 2018 15TH INTERNATIONAL DESIGN CONFERENCE (pp. 405-416).
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- C26 BECATTINI, N., & CASCINI, G. (2019, JULY). **IMPACT OF INVENTIVE DESIGN EDUCATION THROUGH THE CORRELATION BETWEEN STUDENTS' GRADES AND INDIVIDUAL TALENT**. In *PROCEEDINGS OF THE DESIGN SOCIETY: INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN (VOL. 1, No. 1, pp. 529-538)*. CAMBRIDGE UNIVERSITY PRESS.
- C27 BECATTINI N., CASCINI G., O'HARE, J. A., MOROSI, F., & BOUJUT, J. F. (2019, JULY). **EXTRACTING AND ANALYSING DESIGN PROCESS DATA FROM LOG FILES OF ICT SUPPORTED CO-CREATIVE SESSIONS**. In *PROCEEDINGS OF THE DESIGN SOCIETY: INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN (VOL. 1, No. 1, pp. 129-138)*. CAMBRIDGE UNIVERSITY PRESS.
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- D15 BECATTINI N.; CARUSO G **“SPARK - REALTÀ AUMENTATA PROIETTATA PER LA PROGETTAZIONE CREATIVA COLLABORATIVA”** - ADM WORKSHOP - POLITECNICO DI MILANO - 14-15 FEBRUARY 2017
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