

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

Name **BECATTINI NICCOLÒ**
Address -
Telephone -
Fax -
E-mail niccolo.becattini@polimi.it

Nationality ITALIAN

Date of birth MAY 24TH 1982

**PROFESSIONAL AND TEACHING
HABILITATION/QUALIFICATION**

Title of qualification awarded **HABILITATION AS ASSOCIATE PROFESSOR (PROFESSORE II FASCIA)**
• Dates (from – to) **ACHIEVED: APRIL 10TH 2017 – VALID UNTIL APRIL 10TH 2023**
• Scientific Sector ING-IND/15
• Concourse Sector 09/A3 - PROGETTAZIONE INDUSTRIALE, COSTRUZIONI MECCANICHE E METALLURGIA
Name and type of organization ASN (Abilitazione Scientifica Nazionale) – Panel of full professors belonging to the Concourse
providing the qualification 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 **PROFESSIONAL QUALIFICATION AS INDUSTRIAL ENGINEER (SECTION A)**
• Dates **June - September 2009 (summer session exam)**
• Name and type of organisation Italian Ministry of Education, University and Research
providing the qualification
• Level in national classification Abilitazione all'esercizio della professione di Ingegnere Industriale (sez. A)
(if appropriate)

Title of qualification awarded **PROFESSIONAL QUALIFICATION AS INDUSTRIAL ENGINEER (SECTION B - JUNIOR)**
• Dates (from – to) **July 2007 (summer session exam)**
• Name and type of organisation Italian Ministry of University and Research
providing education and training
• Level in national classification Abilitazione all'esercizio della professione di Ingegnere Industriale (sez. B - junior)
(if appropriate)

WORK EXPERIENCE

<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer • Type of business or sector • Occupation or position held • Main activities and responsibilities 	<p>FEBRUARY 2ND 2015 – IN PROGRESS (END OF CONTRACT: JANUARY 31ST 2020)</p> <p>Politecnico di Milano - Dipartimento di Meccanica Via privata Giuseppe La Masa, 1 20156 Milano Italy</p> <p>Academic Research</p> <p>Assistant Professor (Ricercatore a tempo determinato tipologia A)</p> <p>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 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. 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)</p>
<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer • Type of business or sector • Occupation or position held • Main activities and responsibilities 	<p>FEBRUARY 2013 - JANUARY 2015</p> <p>Politecnico di Milano - Dipartimento di Meccanica Via privata Giuseppe La Masa, 1 20156 Milano Italy</p> <p>Academic Research</p> <p>Post Doc/Research Fellow</p> <p>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 modeling 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”)</p>
<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer • Type of business or sector • Occupation or position held • Main activities and responsibilities 	<p>SEPTEMBER 2010 - IN PROGRESS</p> <p>Politecnico di Milano - Dipartimento di Meccanica Via privata Giuseppe La Masa, 1 20156 Milano Italy</p> <p>Academic Research</p> <p>Contract Professor and Teaching Assistant for various classes</p> <p>More specific details are available in the next sections (Work Experiences in Educational Activities)</p>
<ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer • Type of business or sector • Occupation or position held • Main activities and responsibilities 	<p>SEPTEMBER 2014 - JANUARY 2015 (4 MONTHS)</p> <p>Whirlpool Europe (Italy) Via Aldo Moro 5 Cassinetta di Biandronno (VA) Italy</p> <p>Manufacturing of White goods (Domestic appliances)</p> <p>Seconded (from Politecnico di Milano) Experienced Researcher for the FORMAT Project (Marie Curie, Project Number FP7-PEOPLE-2011-IAPP/286305):</p> <p>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.</p>

- Dates (from – to)
 - Name and address of employer
 - MARCH 2014 - MAY 2014 (3 MONTHS)**
 - 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)
 - Name and address of employer
 - OCTOBER 2013 - JANUARY 2014 (3 MONTHS)**
 - 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)
 - Name and address of employer
 - APRIL 2013 - JUNE 2013 (3 MONTHS)**
 - 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)
 - Name and address of employer
 - FEBRUARY 2011 - JANUARY 2013**
 - 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
Research Fellow
 - Main activities and responsibilities
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)
 - Name and address of employer
 - JULY 2009 - JANUARY 2011**
 - 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
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)
- Name and address of employer
- Type of business or sector
- Occupation or position held
- Main activities and responsibilities

MARCH 2003 - MARCH 2014

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

Agency Agreement (Food sector)

Trade agent

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)
- Name and address of employer
 - Type of business or sector
 - Occupation or position held
- Main activities and responsibilities

DECEMBER 2003 - JANUARY 2004

Orso Bruno S.r.l

Restaurant

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

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

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

JULY 2000

Centro Storico S.r.l

Restaurant

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

Room setting, Guests welcome, Taking and delivering orders.

WORK EXPERIENCE IN INTERNATIONALLY FUNDED PROJECTS

- Project Name**
- Starting date
- Duration
- Name of the funding body
- Funding action
- Grant Agreement number
- Total Budget
- Project website
- Brief Project Description
- Role in the project

FORMAT – FORECASTING AND ROADMAPING FOR MANUFACTURING TECHNOLOGIES

JANUARY 1ST 2012

48 MONTHS

European Union

FP7 - PEOPLE - Marie Curie Actions – IAPP (FP7-PEOPLE-2011-IAPP)

286305

€ 1.690.454,00

<http://www.format-project.eu> (more details available here)

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.

Niccolò Becattini was one of the key people 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 ST 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	<p>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.</p>
Role in the project	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> - Planning of Task activities and Coordination of some of them. - Design and execution of experimental protocols - 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 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 more than 10 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 to Consortium Meetings, ESB and Innovation Management Board Meetings (live and VoIP). - Building solid relationships among the consortium partners

WORK EXPERIENCE IN EDUCATIONAL ACTIVITIES

- 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), 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 training for (among the others):

- *Archa (Laboratorio Archa) - Chemical Analyses, Research, Training*
- *ARTEFICE Brand Design – Packaging Design*
- *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*
- *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*
- *PAICristal – Polishing technologies*
- *PNO Consultants (Belgium) - Grants and innovation consultancy*
- *Rold Group – Electro-mechanic devices for household appliances;*
- *STIMULO Design – Product Design*
- *Unox – Professional ovens for cooking;*
- *VISEO – Software development and related services*
- *Whirlpool – Household appliances;*

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

JANUARY 2015 – IN PROGRESS

Politecnico di Milano - Dipartimento di Meccanica
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
- **Croce Alberto** – Thesis in Progress (expected conclusion AY 2018/19)
- **Natalucci Luca** – Thesis in Progress (expected conclusion AY 2018/19)

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 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 2020

List of classes as CONTRACT PROFESSOR (Upon recruitment calls based on professional qualifications and teaching experiences)

- | | |
|--|---|
| <ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer <ul style="list-style-type: none"> • Type of business or sector • Occupation or position held • Main activities and responsibilities | <p>SEPTEMBER 2018 – JANUARY 2019</p> <p>Politecnico di Milano – Scuola del Design
Academic 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)</p> |
| <ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer <ul style="list-style-type: none"> • Type of business or sector • Occupation or position held • Main activities and responsibilities | <p>FEBRUARY 2018 - JUNE 2018</p> <p>Politecnico di Milano - Dipartimento di Meccanica
Academic 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)</p> |
| <ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer <ul style="list-style-type: none"> • Type of business or sector • Occupation or position held • Main activities and responsibilities | <p>FEBRUARY 2017 AND JUNE 2017</p> <p>Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Contract Professor – Lectures in Italian
Lectures for the <u>tutoring course</u> (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.</p> |
| <ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer <ul style="list-style-type: none"> • Type of business or sector • Occupation or position held • Main activities and responsibilities | <p>MAY – JUNE 2016</p> <p>Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Contract Professors – Lectures in Italian
Lectures for the <u>tutoring course</u> (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..</p> |
| <ul style="list-style-type: none"> • Dates (from – to) • Name and address of employer <ul style="list-style-type: none"> • Type of business or sector • Occupation or position held • Main activities and responsibilities | <p>FEBRUARY 2016</p> <p>Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Contract Professor – Lectures in Italian
Lectures for the <u>tutoring course</u> (14 hours) on Metodi di Rappresentazione Tecnica (English translation: Methods for Technical Representation) (7 CFU/ECTS) - Course within the</p> |

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
- MAY 2015**
Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Contract Professor – Lectures in Italian
Lectures for the **tutoring course** (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.

- Dates (from – to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- FEBRUARY 2015**
Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Contract Lecturer – Lectures in Italian
Lectures for the **tutoring course** (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
- SEPTEMBER 2018 - JANUARY 2019**
Politecnico di Milano - Dipartimento di Meccanica
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
- SEPTEMBER 2018 - JANUARY 2019**
Politecnico di Milano - Dipartimento di Meccanica
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
- SEMPTEMBER 2017 - JANUARY 2018**
Politecnico di Milano - Dipartimento di Meccanica
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
- SEPTEMBER 2017 - JANUARY 2018**
Politecnico di Milano - Dipartimento di Meccanica
Academic Research
Teaching Assistant of Prof. Gaetano Cascini - Lectures in Italian

- Main activities and responsibilities
 - 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
 - OCTOBER 2016 - FEBRUARY 2017**
 Politecnico di Milano - Dipartimento di Meccanica
 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
 - OCTOBER 2016 - FEBRUARY 2017**
 Politecnico di Milano - Dipartimento di Meccanica
 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
 - OCTOBER 2015 - FEBRUARY 2016**
 Politecnico di Milano - Dipartimento di Meccanica
 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
 - OCTOBER 2015 - FEBRUARY 2016**
 Politecnico di Milano - Dipartimento di Meccanica
 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
 - SEPTEMBER 2014 - FEBRUARY 2015**
 Politecnico di Milano - Dipartimento di Meccanica
 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

SEPTEMBER 2014 - FEBRUARY 2015

Politecnico di Milano - Dipartimento di Ingegneria Gestionale
 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

SEPTEMBER 2013 - FEBRUARY 2014

Politecnico di Milano - Dipartimento di Meccanica
 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) - 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

SEPTEMBER 2012 - FEBRUARY 2013

Politecnico di Milano - Dipartimento di Meccanica
 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) - 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

MARCH 2012- JUNE 2012

Politecnico di Milano - Dipartimento di Meccanica
 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

SEPTEMBER 2011 - FEBRUARY 2012

Politecnico di Milano - Dipartimento di Meccanica
 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

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

MARCH 2011- JUNE 2011

Politecnico di Milano - Dipartimento di Meccanica
 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

SEPTEMBER 2010 - FEBRUARY 2011

Politecnico di Milano - Dipartimento di Meccanica

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

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.

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)
 - 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)
 - 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 course 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)
- AAYY 2006/07-2007/08**
University of Florence (Italy)
- Course of 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*
- MS degree in Mechanical Engineering at the University of Florence, Italy received on April 7th 2009.*
Laurea specialistica - Voto Finale 110/110 con lode accademica
- AY2001/2002-2005/06**
University of Florence (Italy)
- Course of 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.*
- BS degree in Mechanical Engineering at the University of Florence, Italy received on December 6th 2006.*
Laurea triennale

AWARDS

- Data (da-a)
 - Nome e tipologia dell’ente che assegna il premio
 - Titolo del premio
 - Dates (from – to)
 - Name and type of organisation providing education and training
 - Title of Award
 - Level in national classification
- 2018**
Editorial board of the Journal of Engineering Design
- Reviewer of the year** (based on the continued quality, timeliness and number of reviews during the year)
- February 2018**
Organizing Committee and Programme committee of the International Conference on Design Creativity 2018 (ICDC18)
- Reviewers’ Favorite paper** (top 5 papers according to reviewers’ evaluation)
Not applicable

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

August 2014

ASME (The American Society of Mechanical Engineers) - Computers and Information in Engineering Division

Best PhD Thesis/Dissertation award

International Award - Not applicable

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

February 2010

APEIRON (The Italian Association for Systematic Innovation)

Best MS Thesis on Systematic Innovation by Apeiron (Italian Association for Systematic Innovation)

Premio di laurea triennale Apeiron (2010)

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

February 2007

APEIRON (The Italian Association for Systematic Innovation)

Best BS Thesis on Systematic Innovation by Apeiron (Italian Association for Systematic Innovation)

Premio di laurea triennale Apeiron (2007)

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

- Reading skills
- Writing skills
- Verbal skills

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

EXCELLENT

EXCELLENT

EXCELLENT

- Reading skills
- Writing skills
- Verbal skills

FRENCH (SECONDARY SCHOOL DEGREE – 11/14YO)

GOOD

BASIC

BASIC

- Reading skills
- Writing skills
- Verbal skills

SPANISH (NO CERTIFICATION)

BASIC

BASIC

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) and the SPARK project (((Horizon2020 grant agreement no. 688417), 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)

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

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 4th-6th - Timisoara, Romania)
- TRIZ Future Conference 2010 (November 3rd-5th - Bergamo, Italy) – presentation of one original research paper
- TRIZ Future Conference 2011 (November 2nd-4th - Dublin, Ireland) – presentation of one original research paper
- CAD Conference 2012 (June 11th-14th - Niagara Falls, Ontario, Canada) – presentation of two original research paper
- International workshop on “Impact of Design Research on Practice (July 22nd-23rd 2013 - Munchen, Germany)
- DESIGN Conference 2014 (May 19th-22nd- Cavtat - Dubrovnik, Croatia) – presentation of one original research paper
- TRIZ Future Conference 2014 (October 29th-31st - Lausanne - Geneve, Switzerland) – presentation of one original research paper
- CAD Conference 2015 (June 2015, Greenwich, London, England) – presentation of one original research paper
- ICED15 - 20th International Conference on Engineering Design (July 27th-31st 2015 - Milan, Italy) – presentation of two original research paper
- DCC16 – 7th international conference on Design Computing and Cognition (June 25th-30th, Northwestern University – Evanston – Chicago, IL – USA) – presentation of one original research paper
- ICED17 – 21st International Conference on Engineering Design (August 2017 – University of British Columbia – Vancouver, Canada) – presentation of two original research paper
- ICDC18 – 5th international Conference on Design Creativity (January-February 2018, Bath, England) - presentation of two original research paper
- DESIGN conference 2018 (21st-24th May – Dubrovnik, Croatia) – Organization and coordination of a 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.

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. He 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.

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 (specific role, where relevant, in brackets):

- 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)
- 8th 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).

- *Design creativity and innovation processes*
 - Formalization of heuristics for inventive design and problem solving based on TRIZ and Bio-Inspired Design (2009-present) [A1, A3, A6, B2, B9, B18, C3, C12, C13]
 - Assessment of design creativity (2012-present) [A8, A9; B7, B15, B16, B19, B20, B24, C10]
 - Investigating and modelling the cognitive processes in engineering design (2012-present) [B5, B6, B10, B13, B16, B20, C4]
 - User needs, user experience and emotional aspects of design (2014-present) [A7, A8, B15, B16, B19, B24]
 - Educational issues to enhance design creativity of engineering students and industry employees (2013-present) [A4, B10, B21, B22, B23, C9]
- *Computer-Aided support to the innovation pipeline* (2010-present) [A1, A2, A3, A4, A5, A6, B3, B4, C5, C7, C8, C11, C12]
- *Innovation driven business process re-engineering*
 - Modelling and analysis of business processes for technology substitution opportunities (2010-present) [B8, B11, B12, B17, B21, B22, B23, C6]
 - Innovation models and techniques for technology forecasting (2009-present) [B1, B12, B14, C1, C2]

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 ETRIA (European TRIZ Association) (2009-ongoing)
- 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)
 - 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 8th Design Computing and Cognition Conference 2018 (DCC18)
 - Member of the Scientific Advisory Board of the 20th Design Conference (DESIGN2018)
- Member of the Programme committee for the International Conference on Research into Design (ICoRD'19)

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

OTHER SKILLS
AND COMPETENCES
Competences not mentioned above.

January 2010, expert-consultant TRIZ qualification, 3rd grade, Altshuller's criteria by TRIZ Master Alexander Narbut.

DRIVING LICENCE(S)

Italian Driving License type B (Cars)

ADDITIONAL INFORMATION

[Include here any other information that may be relevant, for example contact persons, references, etc.]

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.
- A2 BECATTINI N., BORGIANNI N., CASCINI G., ROTINI F.: **“ABOUT THE INTRODUCTION OF A DIALOGUE-BASED INTERACTION WITHIN CAD SYSTEMS”**, COMPUTER-AIDED DESIGN AND APPLICATIONS, 10(3), 2013, PP. 499-514.
- A3 BECATTINI N., CASCINI G.: **“MAPPING CAUSAL RELATIONSHIPS AND CONFLICTS AMONG DESIGN PARAMETERS AND SYSTEM REQUIREMENTS”**, COMPUTER-AIDED DESIGN AND APPLICATIONS, 10(4), 2013, PP. 643-662.
- A4 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“A TRIZ-BASED CAI FRAMEWORK TO GUIDE ENGINEERING STUDENTS TOWARDS A BROAD-SPECTRUM INVESTIGATION OF INVENTIVE TECHNICAL PROBLEMS”**, INTERNATIONAL JOURNAL OF ENGINEERING EDUCATION, 29(2), 2013, PP. 318-333
- A5 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“QUESTION/ANSWER TECHNIQUES WITHIN CAD ENVIRONMENTS: AN INVESTIGATION ABOUT THE MOST EFFECTIVE INTERFACES”**, COMPUTER-AIDED DESIGN AND APPLICATIONS, 10(6), 2013, PP. 905-917
- A6 BECATTINI N., CASCINI G., ROSA F.: **“EMBEDDING BIOLOGICAL KNOWLEDGE IN A CONCEPTUAL DESIGN TOOL”**, COMPUTER-AIDED DESIGN AND APPLICATIONS, VOL 13, N.5, P701-711
- A7 PUCILLO F., BECATTINI N., CASCINI G.: **“A UX MODEL FOR THE COMMUNICATION OF EXPERIENCE AFFORDANCES”**, DESIGN ISSUES - MIT PRESS JOURNALS - VOL 32 – N.2 – P13-18
- A8 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“SURPRISE AND DESIGN CREATIVITY: INVESTIGATING THE DRIVERS OF UNEXPECTEDNESS”**, INTERNATIONAL JOURNAL OF DESIGN CREATIVITY AND INNOVATION, VOL 5 NO1-2 - 29-47.
- A9 SALIMINAMIN S, BECATTINI N, CASCINI G: **“SOURCES OF CREATIVITY STIMULATION FOR DESIGNING THE NEXT GENERATION OF TECHNICAL SYSTEMS: CORRELATIONS WITH R&D DESIGNERS' PERFORMANCE”** – RESEARCH IN ENGINEERING DESIGN, ACCEPTED FOR PUBLICATION
- A10 O'HARE, J., DEKONINCK, E., MOMBESHORA, M., MARTENS, P., BECATTINI, N. AND BOUJUT, J.F., 2018. **DEFINING REQUIREMENTS FOR AN AUGMENTED REALITY SYSTEM TO OVERCOME THE CHALLENGES OF CREATING AND USING DESIGN REPRESENTATIONS IN CO-DESIGN SESSIONS**. CoDESIGN, PP.1-24.

CONFERENCE PAPERS INDEXED BY ISI/SCOPUS AND ARTICLES PUBLISHED ON INDEXED BOOKS

- B1 BECATTINI N., CASCINI G., ROTINI F.: **“CORRELATIONS BETWEEN THE EVOLUTION OF CONTRADICTIONS AND THE LAW OF IDEALITY INCREASE”**, PROCEEDINGS OF THE 9TH ETRIA TRIZ FUTURE CONFERENCE (SPONSORED BY CIRP), ISBN 978-973-625-969-2 TIMISOARA, ROMANIA, 4-6 NOVEMBER 2009, PP. 26-34. REPUBLISHED ON PROCEDEA ENGINEERING, VOLUME 9, 2011, PAGES 236-250.
- B2 BALDUSSU A., BECATTINI N., CASCINI G.: **“NETWORK OF CONTRADICTIONS: ANALYSIS AND STRUCTURED IDENTIFICATION OF CRITICAL CONTROL PARAMETERS”**, PROCEEDINGS OF THE 10TH ETRIA TRIZ FUTURE CONFERENCE (SPONSORED BY CIRP), BERGAMO, ITALY, 3-5 NOVEMBER 2010. PP.19-27. REPUBLISHED ON PROCEDEA ENGINEERING, VOLUME 9, 2011, PAGES 3-17.
- B3 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“COMPUTER-AIDED PROBLEM SOLVING - PART 1: OBJECTIVES, APPROACHES, IDENTIFICATION OF SYSTEM REQUIREMENTS”**, PROCEEDINGS OF THE 4TH IFIP WORKING CONFERENCE ON COMPUTER-AIDED INNOVATION, STRASBOURG, FRANCE, 30 JUNE – 1JULY 2011.
- B4 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“COMPUTER-AIDED PROBLEM SOLVING - PART 2: A DIALOGUE-BASED SYSTEM TO SUPPORT THE ANALYSIS OF INVENTIVE PROBLEMS”**, PROCEEDINGS OF THE 4TH IFIP WORKING CONFERENCE ON COMPUTER-AIDED INNOVATION, STRASBOURG, FRANCE, 30 JUNE – 1JULY 2011.
- B5 BECATTINI Y., BORGIANNI N., CASCINI G., ROTINI F.: **“EXPERIENCING PROTOCOL ANALYSIS OF COMPUTER-GUIDED DESIGN TASKS”**, PROCEEDINGS OF THE INTERNATIONAL DESIGN CONFERENCE - DESIGN 2012, DUBROVNIK, CROATIA, MAY 21 - 24, 2012, PP. 1821-1830.

- B6 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“ASSESSING THE PERFORMANCE OF COMPUTERIZED TOOLS FOR INVENTIVE DESIGN: INSIGHTS FROM UNSATISFACTORY OUTCOMES”**, PROCEEDINGS OF THE 22ND CIRP DESIGN CONFERENCE, 20-30 MARCH 2012, BANGALORE, INDIA, RE-PUBLISHED BY SPRINGER IN THE VOLUME “SUSTAINABLE PRODUCT DEVELOPMENT” (ED. AMARESH CHAKRABARTI), PP. 93-103
- B7 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“DOES EXPERIENCE IN DESIGN AND INNOVATION AFFECT THE PERCEPTION OF CREATIVITY?”**, PROCEEDINGS OF THE 19TH INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN (ICED13), SEOUL, SOUTH KOREA, 19-22 AUGUST 2013, PP.129-138
- B8 BECATTINI N., CASCINI G., PETRALI P., PUCCIARINI A.: **“PRODUCTION PROCESSES MODELING FOR IDENTIFYING TECHNOLOGY SUBSTITUTION OPPORTUNITIES”**, PROCEEDINGS OF THE 11TH ETRIA TRIZ FUTURE CONFERENCE (SPONSORED BY CIRP), DUBLIN, IRELAND, 2-4 NOVEMBER 2011
- B9 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“ARIZ85 AND PATENT-DRIVEN KNOWLEDGE SUPPORT”**, PROCEEDINGS OF THE 12TH ETRIA TRIZ FUTURE CONFERENCE (SPONSORED BY CIRP), LISBON, PORTUGAL, 24-26 OCTOBER 2012, PP.143-156.
- B10 BECATTINI N., CASCINI G., ROTINI F.: **“OTSM-TRIZ NETWORK OF PROBLEMS FOR EVALUATING THE DESIGN SKILLS OF ENGINEERING STUDENTS”**, PROCEEDINGS OF THE 13TH TRIZ FUTURE CONFERENCE, PARIS (FRANCE), 29-31 OCTOBER 2013, PP. 55-66.
- B11 BECATTINI N., CASCINI G., NIKULIN C.: **“MODELLING THE DYNAMICS OF PRODUCTS AND PROCESSES REQUIREMENTS”**, PROCEEDINGS OF THE 13TH TRIZ FUTURE CONFERENCE, PARIS (FRANCE), 29-31 OCTOBER 2013, PP. 43-54
- B12 BECATTINI N., CASCINI G.: **“GENERAL-PURPOSE REQUIREMENTS CHECKLIST FOR IMPROVING THE COMPLETENESS OF A DESIGN SPECIFICATION”**, PROCEEDINGS OF THE DESIGN 2014 13TH INTERNATIONAL DESIGN CONFERENCE, DUBROVNIK, CROATIA, 19-22 MAY 2014
- B13 BECATTINI N., CASCINI G., ROTINI F.: **“AN OTSM-TRIZ BASED FRAMEWORK TOWARDS THE AUTOMATIC IDENTIFICATION OF COGNITIVE PROCESSES IN DESIGN PROTOCOLS”**, PROCEEDINGS OF THE SIXTH INTERNATIONAL CONFERENCE ON DESIGN COMPUTING AND COGNITION (DCC14), 23-25 JUNE 2014, UNIVERSITY COLLEGE LONDON, LONDON, UK
- B14 CASCINI G, BECATTINI N, KAIKOV I, KOZIOLEK S, KUCHARAVY D, NIKULIN C, PETRALI P, SLUPINSKY M, RABIE M, RAMADURAI B, RUGGERI L, VANHERCK K: **“FORMAT - BUILDING AN ORIGINAL METHODOLOGY FOR TECHNOLOGY FORECASTING THROUGH RESEARCHERS EXCHANGES BETWEEN INDUSTRY AND ACADEMIA”** — PROCEEDINGS OF THE TRIZ FUTURE CONFERENCE - OCTOBER 2014 - LAUSANNE - SWITZERLAND
- B15 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“AN INVESTIGATION ON FACTORS TRIGGERING SURPRISE”**, SUBMITTED FOR PUBLICATION IN THE PROCEEDINGS OF THE 3RD INTERNATIONAL CONFERENCE ON DESIGN CREATIVITY (ICDC14), 12-14 JANUARY 2015, BANGALORE, INDIA
- B16 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“SURPRISE AS A SITUATED PHENOMENON”**, PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN 2015 (ICED2015), 27-30 JULY 2015, MILANO, ITALIA
- B17 BECATTINI N, CASCINI G, ROTINI F: **“ REQUIREMENTS CHECKLISTS: BENCHMARKING THE COMPREHENSIVENESS OF THE DESIGN SPECIFICATION ”** — PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN 2015 (ICED2015), 27-30 JULY 2015, MILANO, ITALIA
- B18 BECATTINI N., BORGIANNI Y., FRILLICI F.S.: **“EMPLOYING CUSTOMER VALUE CRITERIA TO ADDRESS NETWORKS OF CONTRADICTIONS IN COMPLEX TECHNICAL SYSTEMS”**, SUBMITTED FOR PUBLICATION IN THE PROCEEDINGS OF THE TRIZ FUTURE CONFERENCE - OCTOBER 2015 - BERLIN – GERMANY
- B19 BECATTINI N, CASCINI G, MONTAGNA F: **“EXPLORING THE COGNITIVE DYNAMICS OF PRODUCT APPRECIATION”** - PROCEEDINGS OF THE SEVENTH INTERNATIONAL CONFERENCE ON DESIGN COMPUTING AND COGNITION (DCC16), 25-29 JUNE 2016, NORTHWESTERN UNIVERSITY, EVANSTON, CHICAGO, IL (USA).
- B20 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“WHAT SURPRISED YOU? A QUESTIONNAIRE TO MAP UNEXPECTEDNESS THROUGH FBS VARIABLES** PROCEEDINGS OF THE 4TH INTERNATIONAL CONFERENCE ON DESIGN CREATIVITY (ICDC16), 02-04 NOVEMBER 2016, ATLANTA, GA (USA)
- B21 BECATTINI N., CASCINI G., FRILLICI F.S., SILIPIGNI F.: **“A FRAMEWORK FOR THE DISSEMINATION OF DESIGN RESEARCH FOCUSED ON INNOVATION”**, IN *“IMPACT OF DESIGN RESEARCH ON INDUSTRIAL PRACTICE”* SPRINGER, EDITORS: AMARESH CHAKRABARTI AND UDO LINDEMANN (2016)

- B22 McMAHON C., BECATTINI N., CHAKRABARTI A., LINDEMANN U., WEIL B., WOLF B., WOOD K: **"RESULTS FROM THE BREAKOUT SESSIONS OF GROUP B"**, IN *"IMPACT OF DESIGN RESEARCH ON INDUSTRIAL PRACTICE"* SPRINGER, EDITORS: AMARESH CHAKRABARTI AND UDO LINDEMANN (2016)
- B23 BECATTINI N., CASCINI G.: **"IMPROVING SELF-EFFICACY IN SOLVING INVENTIVE PROBLEMS WITH TRIZ"**, IN *"MULTIDISCIPLINARY CONTRIBUTIONS TO THE SCIENCE OF CREATIVE THINKING"*, ED. GIOVANNI CORAZZA, SPRINGER, (2015).
- B24 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).
- B25 BECATTINI, N., MASCLLET, C., BEN-GUEFRACHE, F., PRUDHOMME, G., CASCINI, G., & DEKONINCK, E. (2017). **CHARACTERISATION OF A CO-CREATIVE DESIGN SESSION THROUGH THE ANALYSIS OF MULTI-MODAL INTERACTIONS**. IN *INTERNATIONAL CONFERENCE ON ENGINEERING DESIGN 2017* (PP. 479-488).
- B26 JIA, L., BECATTINI, N., CASCINI, G., & TAN, R. (2018). **TESTING DESIGN STIMULI FOR DESIGN-BY-ANALOGY ON A LARGE SET OF DESIGNERS**. IN ICDC 2018 THE FIFTH INTERNATIONAL CONFERENCE ON DESIGN CREATIVITY (PP. 1-8). THE FACULTY OF ENGINEERING, UNIVERSITY OF BATH, UK-THE DESIGN SOCIETY, GLASGOW.
- B27 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).
- B28 BECATTINI, N., CASCINI, G., O'HARE, J. A., & MASCLLET, C. (2018). **CODING SCHEMES FOR THE ANALYSIS OF ICT SUPPORTED CO-CREATIVE DESIGN SESSIONS**. IN DS92: PROCEEDINGS OF THE DESIGN 2018 15TH INTERNATIONAL DESIGN CONFERENCE (PP. 533-544)..

FURTHER INTERNATIONAL SCIENTIFIC PAPERS

- C1 BECATTINI N., CASCINI G., ROTINI F.: **"CORRELATIONS BETWEEN THE EVOLUTION OF CONTRADICTIONS AND THE LAW OF IDEALITY INCREASE"**, FIFTH TRIZ SYMPOSIUM IN JAPAN, NATIONAL WOMEN'S EDUCATION CENTER (NVEC), RANZAN-CHO, HIKI-GUN, SAITAMA PREFECTURE, JAPAN, 10-12 SEPTEMBER 2009.
- C2 BECATTINI N., CASCINI G., ROTINI F.: **"CORRELATIONS BETWEEN THE EVOLUTION OF CONTRADICTIONS AND THE LAW OF IDEALITY INCREASE"**, TRIZ DEVELOPERS SUMMIT-2010, SAINT-PETERSBURG, RUSSIA, 26 JULY 2010.
- C3 BECATTINI N., CASCINI G., D'ANNA W.: **"SYSTEMATIC INNOVATION ORIENTED AT REDUCING ENERGY AND WATER CONSUMPTION IN HOUSEHOLD APPLIANCES"**, PRESENTATION AT THE GLOBAL TRIZ CONFERENCE 2010 IN KOREA, SEOUL, SOUTH KOREA, 11-12 MARCH 2010 (SLIDES).
- C4 BORGIANNI Y., BECATTINI N., CASCINI G., ROTINI F.: **"COGNITIVE PROCESSES IN THE ANALYSIS OF INVENTIVE PROBLEMS COACHED BY A COMPUTER"**, PROCEEDINGS OF THE FIRST INTERNATIONAL CONFERENCE ON DESIGN CREATIVITY (ICDC2010), KOBE, JAPAN, 29 NOVEMBER – 1 DECEMBER 2010, PUBLISHED ON "DESIGN CREATIVITY 2010", TOSHIHARU TAURA, YUKARI NAGAI ED., SPRINGER, ISBN 978-0-85729-223-0, PP. 289-296.
- C5 BORGIANNI Y., BECATTINI N., CASCINI G., ROTINI F.: **"COMPUTER-AIDED PROBLEM SOLVING: A DIALOGUE-BASED SYSTEM TO SUPPORT THE ANALYSIS OF INVENTIVE PROBLEMS"**, SIXTH TRIZ SYMPOSIUM IN JAPAN, KANAGAWA I. T., JAPAN, 9-11 SEPTEMBER 2010.
- C6 BECATTINI N., CASCINI G., PETRALI P., PUCCIARINI A.: **"IDENTIFICATION OF TECHNOLOGY SUBSTITUTION OPPORTUNITIES THROUGH TRIZ-BASED PROCESS MODELLING: A CASE STUDY AT WHIRLPOOL EUROPE"**, PROCEEDINGS OF THE JAPAN TRIZ SYMPOSIUM, TOSHIBA KENSHU CENTER, YOKOHAMA, JAPAN, 8-10 SEPTEMBER 2011.
- C7 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **"ABOUT THE INTRODUCTION OF A DIALOGUE-BASED INTERACTION WITHIN CAD SYSTEMS"**, PROCEEDINGS OF THE CAD'12 INTERNATIONAL CONFERENCE, 11-14 JUNE 2012, NIAGARA FALLS, CANADA.
- C8 BECATTINI N., CASCINI G.: **"MAPPING CAUSAL RELATIONSHIPS AND CONFLICTS AMONG DESIGN PARAMETERS AND SYSTEM REQUIREMENTS"**, PROCEEDINGS OF THE CAD'12 INTERNATIONAL CONFERENCE, 11-14 JUNE 2012, NIAGARA FALLS, CANADA.

- C9 BECATTINI N., CASCINI G.: **“IMPROVING SELF-EFFICACY IN SOLVING INVENTIVE PROBLEMS WITH TRIZ”**, PROCEEDINGS OF THE FIRST INTERNATIONAL CONFERENCE ON THE SCIENCE OF CREATIVE THINKING (MIC 2013), BOLOGNA, ITALY, 29 SEPTEMBER - 1 OCTOBER 2013
- C10 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“CREATIVITY THROUGH THE EYES OF INNOVATION EXPERTS AND NOVICES: SIMILARITY AND DIFFERENCES”**, PROCEEDINGS OF THE JOINT INTERNATIONAL CONFERENCE ON SYSTEMATIC INNOVATION & IFIP COMPUTER-AIDED INNOVATION, HSINCHU, TAIWAN, 27-29 JUNE 2013
- C11 BECATTINI N., BORGIANNI Y., CASCINI G., ROTINI F.: **“QUESTION/ANSWER TECHNIQUES WITHIN CAD ENVIRONMENTS: AN INVESTIGATION ABOUT THE MOST EFFECTIVE INTERFACES”**, PROCEEDINGS OF THE CAD CONFERENCE 2013, BERGAMO, ITALY, 17-20 JUNE 2013
- C12 DUROUX L, BECATTINI N, CARIGNANI G, GECELE E, PORCELLATO M: **“ONLINE COLLABORATION FOR TRIZ STUDIES AND PROBLEM SOLVING - THE EXPERIENCE OF APEIRON, THE ITALIAN TRIZ ASSOCIATION”**— PROCEEDINGS OF THE TRIZ FUTURE CONFERENCE - OCTOBER 2014 - LAUSANNE - SWITZERLAND
- C13 BECATTINI N, CASCINI G, ROSA F: **“ EMBEDDING BIOLOGICAL KNOWLEDGE IN A CONCEPTUAL DESIGN TOOL”** PROCEEDINGS OF THE CAD CONFERENCE AND EXHIBITION 2015, 27-30 JULY 2015, GREENWICH, LONDON, ENGLAND.
DOI :10.14733/CADCONF.2015.309-314
- C14 BEN GUEFRACHE F., BECATTINI N., MASCLET C., PRUDHOMME G.: **“MULTI-MODAL INTERACTIONS ANALYSIS TO CHARACTERISE CO-CREATIVE DESIGN SESSION”** 15^E COLLOQUE NATIONAL AIP-PRIMÉCA, APR 2017, LA PLAGNE, FRANCE. 2017
- C15 BECATTINI N., CASCINI G. BEGNONI T., O'HARE J, BOUJUT J.F.: **“IMPROVING THE EFFICIENCY OF DESIGN PROTOCOL ANALYSIS: AN APPROACH TO SPEED UP THE CODING STAGE”** POSTER AT THE 8TH INTERNATIONAL CONFERENCE ON DESIGN COMPUTING AND COGNITION

Data

Firma