APPENDICE AVVISO DI SELEZIONE PER L'ASSEGNAZIONE DI BORSE DI STUDIO DI DOTTORATO DI RICERCA AGGIUNTIVE SU TEMATICHE DELL'INNOVAZIONE (AZIONE IV.4)

Dettaglio tematiche vincolate

Area tematica SNSI 2014-20	SN_A Strategia Nazionale - Industria intelligente e sostenibile, energia e ambiente SN_A1 Processi produttivi innovativi ad alta efficienza e per la sostenibilità industriale
Grande ambito di ricerca PNR 2021-2027	5. Clima, energia, mobilità sostenibile
Area di intervento PNR 2021-2027	Cambiamento climatico, mitigazione e adattamento
Titolo del progetto	L'impresa sostenibile
Supervisore	Claudia Sandei
Corso di Dottorato	DIRITTO INTERNAZIONALE E PRIVATO E DEL LAVORO
Curriculum (eventuale)	
Descrizione del progetto	Companies' role is pivotal in meeting the objectives of the EU Green Deal and designing a sustainable future, as they sit at the junction of consumers, investors, workers, etc. However, the incentives, measurement and accountability mechanisms which frame their governance have traditionally been defined with regards to financial performance only. Therefore, not surprisingly, the European Green Deal (p. 19) sets out that "sustainability should be further embedded into the corporate governance framework" (directors' duties and remuneration criteria; disclosure and accountability requirements; etc.). At a national level, the SNSI (p. 114) also emphasizes the role of company law, while stressing the need to reform business structure (start-up a vocazione sociale; b-corp) and facilitate social investment through corporate crowdinvesting platforms. Accordingly, the project aims to investigate what a robust governance framework for companies would look like under a sustainability paradigm and what function company law and companies directors shall have in this. Doing so, the project provides detailed recommendations to support enterprises to identify governance gaps in their own companies and find practical solutions that will benefit their business and premete its sustainable growth.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_A Strategia Nazionale - Industria intelligente e sostenibile, energia e ambiente SN_A1 Processi produttivi innovativi ad alta efficienza e per la sostenibilità industriale
Grande ambito di ricerca PNR 2021-2027	4. Digitale, industria, aerospazio
Area di intervento PNR 2021-2027	Transizione digitale - I4.0
Titolo del progetto	MODO 4.0 – MODellizzazione e Ottimizzazione nell'Industria 4.0: sviluppo di approcci di machine learning
Supervisore	Pierantonio Facco
Corso di Dottorato	INDUSTRIAL ENGINEERING
Curriculum (eventuale)	Chemical and Environmental Engineerinmg
Descrizione del progetto	This project deals with the development of digital twins to support sustainable fine-chemicals process management and scale-up through Machine Learning (ML) approaches for Industry 4.0. It is divided in 5 work packages (WP; Table 1) to develop: • WP1: multivariate machine learning techniques to allow process understanding from process data fusion; • WP2: innovative data-based monitoring systems to identify/diagnose process anomalies for early fault detection and process troubleshooting; • WP3: hybrid digital twins (integrating ML to process knowledge) to aid the process, product and technology development and scale transfer. • WP4: virtual sensors to predict the quality of intermediates and final product quality. • WP5: methodologies of latent-variables model inversion to propose the formulation of products to obtain a desired product quality from data on historical formulations and pilot scale experiments.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_A Strategia Nazionale - Industria intelligente e sostenibile, energia e ambiente SN_A2 Sistemi produttivi evolutivi e adattativi per la produzione personalizzata
Grande ambito di ricerca PNR 2021-2027	4. Digitale, industria, aerospazio
Area di intervento PNR 2021-2027	Transizione digitale - I4.0
Titolo del progetto	Guidare la transizione delle imprese manifatturiere verso soluzioni integrate e personalizzate attraverso sistemi intelligenti prodotto-servizio
Supervisore	Lara Agostini
Corso di Dottorato	INGEGNERIA ECONOMICO GESTIONALE
Curriculum (eventuale)	
Descrizione del progetto	Digitalization and servitization, despite born independently, are both customer-centric strategies aiming to gain competitive advantage by offering solutions tailored on customer needs. Recently, their potential of mutual strengthening has been recognized, since, if combined, they allow firms ensuring value capture through the development of smart product-service systems. This scenario represents a radical transformation of manufacturing firms: shifting from a product- to a service-centred perspective is far from easy since it is likely to change their business models (BMs). In particular, many incumbents are lacking the methods and capabilities for managing the transition towards these new BMs. To address this challenge that reflects a huge opportunity, this project aims, through an in-depth literature review and company field research, to develop a roadmap and guidelines to support firms through this transition, embracing the human, organizational, technological and strategic areas.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_C Strategia Nazionale - Agenda Digitale, Smart Communities, Sistemi di mobilità intelligente SN_C4 Tecnologie per smart building, efficientamento energetico, sostenibilità ambientale
Grande ambito di ricerca PNR 2021-2027	4. Digitale, industria, aerospazio
Area di intervento PNR 2021-2027	Innovazione per l'industria manifatturiera
Titolo del progetto	Azionamenti elettrici di nuova generazione per l'efficientamento di pompe con motori senza terre rare in applicazioni urbane
Supervisore	Mauro Zigliotto
Corso di Dottorato	INGEGNERIA MECCATRONICA E DELL'INNOVAZIONE MECCANICA DEL PRODOTTO
Curriculum (eventuale)	
Descrizione del progetto	In a recent past, building energy consumption in EU was 37% of final energy, larger than that documented for industrial sectors (28%) and that of transportation (32%). There remain effective chances to lessen the energy use of buildings. Increasingly in very large buildings, a computerized central station monitors and controls services such as heating, air conditioning and water supply. Electronically controlled pumps can be readily integrated into such building automation systems, increasing convenience and saving energy. The Research project will focus on Capacitorless and Sensorless Control of Synchronous Reluctance Motors for pumps application. During the three years of PhD, the student will analyse the scientific and industrial state of the art and study new techniques that lead to the elimination of both bulky electrolytic capacitors and delicate position sensors in electric pumps.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_B Strategia Nazionale - Salute, Alimentazione, Qualità della vita SN_B2 E-health, diagnostica avanzata, medical devices e mini invasività
Grande ambito di ricerca PNR 2021-2027	1. Salute
Area di intervento PNR 2021-2027	Tecnologie per la salute
Titolo del progetto	Controllo della dinamica cerebrale attraverso dispositivi neuromodulatori mini-invasivi
Supervisore	Stefano Vassanelli
Corso di Dottorato	NEUROSCIENCE
Curriculum (eventuale)	
Descrizione del progetto	Neuromodulation is attracting growing interest as a therapy of neurological diseases including Parkinson's, stroke and epilepsy. Novel and minimally invasive brain-computer interfaces are promising towards controlling brain states and facilitate recovery, but successful therapy will crucially depend on understanding and predicting where and how to stimulate. Instead of attempting a simultaneous control of multiple brain regions, which is nowadays technically very challenging, the strategy is to identify and stimulate one or a few key structures with the capability to drive favorable switches between brain states. The PhD project aims at building an efficient computational platform for real-time simulation of electrical stimulation of the brain by minimally invasive implantable devices. The model will be validated in an experimental animal model of stroke and assessed for therapeutic efficacy, taking also advantage of a novel AI-based implant technology for closed-loop neuromodulation.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_D Strategia Nazionale - Turismo, Patrimonio culturale e industria della creatività SN_D4 Tecnologie per le produzioni audio-video, gaming ed editoria digitale
Grande ambito di ricerca PNR 2021-2027	2. Cultura umanistica, creatività, trasformazioni sociali, società dell'inclusione
Area di intervento PNR 2021-2027	Trasformazioni sociali e società dell'inclusione
Titolo del progetto	Perso nella transizione? Per chi e perché le risorse di apprendimento digitali sono vantaggiose
Supervisore	Lucia Mason
Corso di Dottorato	PSYCHOLOGICAL SCIENCES
Curriculum (eventuale)	
Descrizione del progetto	Educational systems are undergoing a massive digital transformation. Unfortunately, this transition is rarely driven by evidence-based instructional design grounded on scientific research, which indicates how learning is a complex interweaving of cognitive, motivational, and socio-emotional processes. All they determine students' school motivation, success, and wellbeing. We know very little about the processes and outcomes of learning through digital resources, in particular regarding those that are designed to remove barriers to learning and/or targeted to vulnerable students. Effectiveness evaluation is therefore a crucial strategy to test the value-added of learning based on digital materials and media that may be used as the traditional ones, or innovatively for their unparalleled affordances. Relying on a multi-method approach, the project includes multiple studies to reveal whether and to what extent, for whom, and why benefits of digitalization emerge in secondary school.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_B Strategia Nazionale - Salute, Alimentazione, Qualità della vita SN_B3 Medicina rigenerativa, predittiva e personalizzata
Grande ambito di ricerca PNR 2021-2027	1. Salute
Area di intervento PNR 2021-2027	Tecnologie per la salute
Titolo del progetto	Intelligenza artificiale per la neuroriabiltazione closed-loop delle funzioni visuospaziali in pazienti con esiti di ictus cerebrale.
Supervisore	Marco Zorzi
Corso di Dottorato	PSYCHOLOGICAL SCIENCES
Curriculum (eventuale)	
Descrizione del progetto	Eye movements are the key to visual exploration, which is fundamental for most activities of daily living. Eye movement disorders may affect over 70% of stroke survivors (Pollock et al., 2011, for a Cochrane review), but very few studies have investigated protocols for their treatment. This project will exploit machine learning coupled with an eye-tracking device to develop a gaze-based biofeedback system for training eye movements. Visual exploration will be tracked in real time and deviation from an ideal observer model will provide a "cost function" to be minimed during training. The system will force the correction of eye movements abnormalities using real-time feedback, thereby reducting the gap with normal visual exploration dynamics. This personalized approach will be tested in a pilot rehabilitation study and its possible extension to a home-based setting will also be explored. The research approach will be strongly interdisciplinary, combining knowledge from cognitive neuroscience and artificial intelligence.
Periodo da svolgere in impresa	8 mesi

Area tematica SNSI 2014-20	SN_B Strategia Nazionale - Salute, Alimentazione, Qualità della vita SN_B4 Biotecnologie, bioinformatica e sviluppo farmaceutico
Grande ambito di ricerca PNR 2021-2027	1. Salute
Area di intervento PNR 2021-2027	Tecnologie farmaceutiche e farmacologiche
Titolo del progetto	Sviluppo del primo farmaco per la Sarcopenia
Supervisore	Marco Sandri
Corso di Dottorato	SCIENZE BIOMEDICHE
Curriculum (eventuale)	
Descrizione del progetto	Human life expectancy has extended in modem societies, aver 20% of Europeans will be 65/over by the 2025. Unfortunately, healthy life has not increased in line with lifespan. Aging sarcopenia, the pathological decrease of muscle mass during life, is a disease that cause the frailty syndrome, a condition 'of vulnerability to develop co-morbidities and precocious mortality. Actually, there are not drugs available to treat sarcopenia and frailty syndrome. This project will use an in-silico platform screening (Rejuvenate's property) to identify and validate new drugs that will be placed on the market for treating sarcopenia and ameliorating quality of life in elderly people. The in-silico identified molecules will test in preclinical trials to show efficacy and safety and to generate a robust rationale for moving to clinical! trials on aging and sarcopenia. This project will provide an important synergistic action between industry and university far targeting human age-related diseases.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_D Strategia Nazionale - Turismo, Patrimonio culturale e industria della creatività SN_D2 Tecnologie e applicazioni per la conservazione, gestione e valorizzazione dei beni culturali, artistici e paesaggistici
Grande ambito di ricerca PNR 2021-2027	2. Cultura umanistica, creatività, trasformazioni sociali, società dell'inclusione
Area di intervento PNR 2021-2027	Discipline storico, letterarie e artistiche
Titolo del progetto	Modelli pubblici di riconoscimento testuale basati sull'intelligenza artificiale e filologia classica: il caso delle cinquecentine di Tito Livio
Supervisore	Gianluigi Baldo
Corso di Dottorato	SCIENZE LINGUISTICHE, FILOLOGICHE E LETTERARIE
Curriculum (eventuale)	
Descrizione del progetto	The project aims at developing a public model far the text recognition and automatic transcription of early modem books in Latin; the corpus will be represented by the 16th-century editions of Livy's Ab urbe condita libri. The project, which will benefit from the expertise of Padua's Interdepartmental Research Centre "Studi Liviani" and the relationship with institutions such as the Marciana Library and the Biblissima Portai, will fruitfully integrate with the activities of DiSSGeA's Mobilab, and will be carried out in partnership with Read-Coop SCE, a society that develops models of digitisation, Al- powered text recognition, and automatic transcription of texts through the platform "Transkribus". The model developed by the researcher will be made publicly applìcable to other corpora, while the data collected will be used to realise an open- access, digitai repository of the textual variants of the AUC's early printed tradition, a long-since desideratum in the field of Livian studies.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_D Strategia Nazionale - Turismo, Patrimonio culturale e industria della creatività SN_D2 Tecnologie e applicazioni per la conservazione, gestione e valorizzazione dei beni culturali, artistici e paesaggistici
Grande ambito di ricerca PNR 2021-2027	2. Cultura umanistica, creatività, trasformazioni sociali, società dell'inclusione
Area di intervento PNR 2021-2027	Discipline storico, letterarie e artistiche
Titolo del progetto	Edizione critica digitale delle opere di Torquato Tasso
Supervisore	Franco Tomasi
Corso di Dottorato	SCIENZE LINGUISTICHE, FILOLOGICHE E LETTERARIE
Curriculum (eventuale)	
Descrizione del progetto	This project aims to produce a critical and commented digital edition of the series of lectures - belonging to the work Prose diverse (1875) - that Torquato Tasso devoted to the poetry of his time (namely six lectures on the lyric works of Pigna, Della Casa and Tasso). The reason to develop this project is twofold. First, no criticai edition of these texts exists; and second, no exegetical work has been carried so far to cast light on this part of Tasso's production which is extremely valuable to assess the author's oeuvre. The digital edition of Tasso's lectures will be published open access - according to the XML-TEI norms - both on a web platform devoted to Tasso and on the webpage of the BIT&S book series · The edition will be available in print too. The researcher working on this project will also participate to the creation of the database on Tasso's works, co-designed by Padua University, Sapienza University in Rome, and the Centre for Studi Tassiani in Bergamo.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_D Strategia Nazionale - Turismo, Patrimonio culturale e industria della creatività SN_D2 Tecnologie e applicazioni per la conservazione, gestione e valorizzazione dei beni culturali, artistici e paesaggistici
Grande ambito di ricerca PNR 2021-2027	2. Cultura umanistica, creatività, trasformazioni sociali, società dell'inclusione
Area di intervento PNR 2021-2027	Discipline storico, letterarie e artistiche
Titolo del progetto	Archivio degli Scrittori Veneti: valorizzazione del patrimonio documentario, predisposizione della digitalizzazione e specimen di edizione critica digitale
Supervisore	Attilio Motta
Corso di Dottorato	SCIENZE LINGUISTICHE, FILOLOGICHE E LETTERARIE
Curriculum (eventuale)	
Descrizione del progetto	The PhD project is aimed at exploiting the Collections relating to some 20th Venetian century writers, located at the Department of Linguistic and Literary Studies of Padua University. The main purpose is to foster synergetic cooperation by building bridges between researchers and enterprises dealing with the digitalization of documentary assets. The PhD student will spend six months in Paris at the ITEM (/nstitut des Textes and Manuscrits Modernes), a research unit at CNRS/ENS, where s/he will be provided with training in digitai scholarly editing; six months will be spent at the DISMA s.a.s., a leading company in the field of dematerialization of cultura! heritage, where s/he will become acquainted with materiai aspects of the digitalization process. The acquired knowledge, added to the training activities provided by the beneficiary, will boost a research project aimed at producing a model for and an example of a digitai scholarly edition of part of the ASV Collections.
Periodo da svolgere in impresa	6 mesi

Area tematica SNSI 2014-20	SN_C Strategia Nazionale - Agenda Digitale, Smart Communities, Sistemi di mobilità intelligente SN_C5 Tecnologie per la diffusione della connessione a Banda Ultra Larga e della web economy
Grande ambito di ricerca PNR 2021-2027	4. Digitale, industria, aerospazio
Area di intervento PNR 2021-2027	High performance computing e big data
Titolo del progetto	Campionamento da social media
Supervisore	Maria Letizia Tanturri
Corso di Dottorato	SCIENZE STATISTICHE
Curriculum (eventuale)	
Descrizione del progetto	Social Media Mining represents the last frontier of the data analysis. Indeed, social media potentially provide an easy and inexpensive way to collect large amounts of data containing feelings, opinions, behaviours (and so on) of the people. However, such collections do not rely on probability samples. Social media samples are not representative of the whole population, because “online” individuals usually have different characteristics and attitudes than “offline” people. This leads to problems of selection bias. However, given the rapidly declining of response rates and increasing costs of probability samples, nonprobability samples (NPS) are becoming an interesting alternative. With the help of a firm specialised in surveys’ administration and data collection, this project aims at: i) developing new solutions to improve the representativeness of NPS selected from social media; ii) defining suitable weighting measures to correct for the systematic differences in probability sampling.
Periodo da svolgere in impresa	6 mesi