

BORSE PER LA PARTECIPAZIONE AL TALENT IMPROVEMENT PROGRAM (TIP) PER STUDENTI DELL'UNIVERSITÀ DEGLI STUDI DI BERGAMO TALENTUOSI A FAVORE DI STUDENTI ISCRITTI AL SECONDO ANNO DELLA LAUREA MAGISTRALE O AL QUINTO ANNO DELLA LAUREA A CICLO UNICO NELL'ANNO ACCADEMICO 2023/2024

ALLEGATO A - RESEARCH PROJECTS AVAILABLE FOR THE TALENT IMPROVEMENT PROGRAM

| Project ID | Department | Proponent/s | Research group (not mandatory) | Project title | Project description | Opportunity to participate to Academic Conferences | Visiting Opportunities | Project in collaboration with other Universities? |
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| 1 | DGIU | Cinzia Peraro | | Cybersecurity strategy, legal framework and social impact. International and European perspectives (PRIN 2022-2024) | The project is funded within the national Call "PRIN 2022" and addresses the issue of cybersecurity from the perspectives of European and International law, namely with regard to the role of the European Union in the context of cybersecurity, its digital governance, also within market dynamics and competition law, as well as with regard to the protection of privacy and personal data of individuals, their digital identity and rights. Fundamental rights in connection with cybersecurity are considered under a multi-sectoral approach by identifying effective means both under public and private enforcement also under the international perspective, having regard to private international law issues. The analysis covers various actions and measures undertaken in different scenarios, especially related to public security and defence, where national authorities or big-tech companies (mostly non-EU based) may arbitrarily make use of such data, or online platforms may extract personal data for political profiling purposes, as well as in external relations, including cross-border data flows. Activities to be implemented include research, drafting reports, organisation of events (especially the seminar to take place in February 2024), elaboration of contents to be published online, and the participation to other national events organised by the other partners. | Seminario su cybersecurity e mercato unico digitale il giorno 23 febbraio 2024 (Bergamo); altri seminari nel 2024 a Napoli, Bari o Bologna. | No | Università di Napoli Federico II, Bari Aldo Moro, Bologna, Cassino |
| 2 | DGIU | Cinzia Peraro | | AIR-CARE (AIR transport law, Consumers And other Related issues in Europe) Jean Monnet Module 2022-2025 | The project has been selected under the Erasmus+ Programme and consists in the organisation and delivery of a 40-hour seminar series dedicated to the air transport sector from a multidisciplinary perspective. Topics include the protection of passenger rights, personal data, competition, borders control, contracts and airport management. The seminars are held by lecturers and experts in the field, including representatives of the Italian Civil Aviation Authority (ENAC) and the Competition and Market Authority (AGCM), as well as the Financial Police working at the International Airport of Orio al Serio. The target groups are students in their final years of degree courses, professionals, especially lawyers, and stakeholders. The objectives of the project are: (i) to | Seminari (40 ore) nel periodo febbraio-marzo 2024 (presso Unibg) e convegno in ottobre 2024. Possibilità di partecipare a una visita presso le istituzioni europee (nel 2025). | No | No |

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| | | | | | <p>support the development of teaching and research activities in order to increase the knowledge and skills of the participants, which is particularly relevant from a territorial point of view; (ii) to contribute with scientific products to the study and deepening of this subject; (iii) to promote synergies with professionals and entities working in the field. The project lasts three years (ending in October 2025). In addition to the series of seminars, a public dissemination event is organised annually.</p> <p>Activities to be implemented include the organisation of the seminar series and the events, research and analysis of case law, preparation of the contents for the seminars, drafting reports, creation of contents for the website and online communication means.</p> | | | |
| 3 | DGIU | Francesca Locatelli | DESK4EU Jean Monnet | <p>DEveloping negotiation Science Knowledge 4 EUROpean Justice (JEAN MONNET Module Oct. 2023- Oct. 2026)</p> | <p>The Project is funded by the EU Commission via the Jean Monnet grants. The level of study, teaching and training in the field of negotiating ADRs are still very heterogeneous and not organised according to a precise systematic model. This situation also generated the arising of unwanted twisted ideas around the negotiating method, which have very little scientific and systematic basis and that indulge more towards a simplistic "holistic approach" or worse manipulation. All this affects very badly the effectiveness and the reputation of the negotiating ADRs.</p> <p>Consequently the project is aimed at the emergence of a greater awareness of the science of negotiation as a subject that rightfully falls within the modern evolution of dispute resolution systems in European civil procedural law and in many different fields of civil justice.</p> | <p>Summer School (June-July) - Conferenze - Negotiation Lab - Italian negotiation Competition - International Negotiation Competition</p> | si | <p>Wagger Negotiation Institute - University of Oslo (Norway) Chapman University (USA) Luiss Guido Carli University Università degli Studi di Milano American University of Rome Aarhus University (Denmark) AccademiAdr - Fondazione ODCEC Milano</p> |
| 4 | DIGIP | Mirko Mazzoleni | Control And Automation Laboratory (prof. Fabio Previdi) | <p>An information theory approach for recursive LPV-ARX model identification via LS-SVM</p> | <p>When modeling a system, linear models are always the first choice due to their simplicity. However, many times the underlying system is too complex so that employing linear models results in poor performances. Nonetheless, modeling non-linear systems is often a challenge due to their complexity. In this context, Linear Parameter Varying are a class of non-linear models that preserve the simple structure of linear models, but at the same time allow to work with complex non-linear systems. LS-SVM is one of the most common approaches to identify an LPV system in an ARX formulation. However, due to its computational cost, it is impossible to employ LPV in online applications, where a model must be estimated every time a new datum is collected. An efficient update algorithm has been presented to overcome these problems. The idea behind the algorithm is to update the model only on certain data that are considered informative, discarding the non-informative ones.</p> | <p>Partecipazione a IFAC Symposium on System Identification, Boston, USA, July 17-19, 2024</p> | No | <p>Università Politecnica delle Marche</p> |

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| | | | | | However, this approach requires the tuning of some hyperparameters and in certain conditions can stop updating the model even when data are informative. In this project, an information theory based algorithm is proposed to overcome these drawbacks. | | | |
| 5 | DIGIP | Sergio Baragetti and Emanuele Vincenzo Arcieri | Structural Mechanics Laboratory | Study of the structural integrity of materials and components with a high performance/mass ratio | The student will participate in the research activity conducted at the Structural Mechanics Laboratory of the University of Bergamo. The focus of the study is to evaluate the strength and durability of materials and components characterized by a high performance/mass ratio, commonly employed in aerospace and racing applications. The research will involve a combination of experimental tests and finite element analyses to investigate the mechanisms leading to failure and identify the possible strategies to prevent it. | Participation in one of the following conferences: ECF Conference (Zagreb, Croatia, 26-30 August 2024), AIAS Conference (Naples, Italy, 4-7 September 2024) | No | No |
| 6 | DIGIP | Chiara Cimini | CELS | Augmented reality technology to support operator in manual assembly/disassembly | The project aims to explore the potentials of Augmented Reality technology to provide operators with real-time assistance during the assembly and disassembly tasks. The project will be developed in the SLIM laboratory and will exploit the Arkite Software to develop and test different instructions models and configurations on a manual operations workbench. The objective of the research work is to understand the effect of AR assistance systems on several production performance indicators, also considering different impacts of the involved human factors. | APMS 2024 - Chemnitz, Germany | No | No |
| 7 | DIGIP | Fabiana Pirola | CELS | Design and engineering of data-driven product-service system | The project aims at reviewing the literature on the methodologies to design and engineering product-service system (PSS) with particular emphasis on data-driven PSS, where the introduction of digital and IoT technologies allow the provision of services (e.g. maintenance) based on data and allow to make more objective decision. The analysis should lead to assess the different methodologies available in literature and to define the one more adapted to engineering data-driven PSS also considering the impact of the solution from environmental sustainability point of view. A possible use case will be also carried out. | 6TH IFAC AMEST2024, June 2024 - Cagliari (IT) | no | The project is conducted with the collaboration of the University of Sevilla |

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| 8 | DIGIP | Matteo Kalchschmidt | Research group on Global Supply Chain Management | Criticality Analysis for Supply Chain Availability and Dependency Evaluation | The project concerns the development of a methodology for analyzing criticalities and dependencies in strategic supply chains for Italy. In particular, critical issues related to critical materials will be considered, but also to the presence of bottlenecks in the supply networks. The project could focus on the analysis of secondary data for the mapping of the supply chains, on the development of a Delphi study involving experts for the identification of the criticalities of a particular supply chain, or on the development of case studies for the mapping of the supply chain and of the criticalities specifications. Among the outputs, the identification of managerial and policy recommendations regarding actions to be implemented to reduce dependencies and the presence of critical issues in strategic supply chains is expected. | Participation in one of the following conferences: EDSI (European Decision Sciences Institute), which will be held in Venice in June 2024; EurOMA (European Operations Management Research Association), which will be held in Barcelona (Spain) in July 2024 | No | Politecnico di Milano, Università degli studi dell'Aquila, Università di Bologna |
| 9 | DIGIP | Mara Brumana, Giovanna Campopiano | Management Engineering | Internationalization and growth of small and medium-sized enterprises in the Bergamo area | The student will have the opportunity to leverage on available data on the phenomena of internationalization and growth to elaborate implications and best practices for a community of small and medium-sized enterprises in the Bergamo area. The student will interact with (i) key actors of the Bergamo ecosystem for innovation; and (ii) a community of international scholars during a scientific conference. | | Partner Universities from EuFBC network (https://eufbc.org/) | |
| 10 | DIGIP | Tommaso Minola | Gruppo di ricerca "Strategic Management & Entrepreneurship" | Student entrepreneurship: mapping the phenomenon and the development of student startups | Despite lack of experience and resources, anecdotal and empirical evidence shows that startups founded by university students and recent graduates represent a key source of creative destruction in knowledge-based industries. The project aims at exploiting data collected in 2023 through the international research project GUESSS (https://www.guesssurvey.org/) in order to explore how university drives the creation and development of student start-ups. | Interdisciplinary European Conference of Entrepreneurship Research - IECER 2024 (https://www.iecer-conference.org/) | Partner universities from the GUESSS network (https://www.guesssurvey.org/) | University of Bern |
| 11 | DIGIP | Landi Daniele, Christian Spreafico | Virtualization & Knowledge group. Coordinatrice prof. Caterina Rizzi | Patent Analysis for Prospective Life Cycle Assessment | This project aims to reduce the gap between the current environmental impact analysis through life cycle assessment methods and methods and tools for prospective environmental assessments evaluations. The students will compare themselves with sustainability experts in Europe (developers of the LCA and Ecoinvent method), and through the skills acquired at unibg for the research and processing of patents, they will develop new approaches for prospective analyses. | 31ST CIRP CONFERENCE ON LIFE CYCLE ENGINEERING JUNE, 19/21 2024 - TURIN - ITALY | Yes, Leiden University. There will be the possibility for both students and teachers of a visiting period. | Leiden University |
| 12 | DIGIU | Francesca Locatelli | Associazione Italiana Arbitrato - CAM Camera arbitrale | Family arbitration | Project for the dissemination of family arbitration in Italy. The project aims to promote the spread of family arbitration in Italy, recognizing its importance as an alternative method for resolving disputes within the | sì | no | The project involves establishing contacts with various scholars in the field, both |

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| | | | nazionale e internazionale di Milano - Arbitrando Associazione per l'arbitrato | | family context. Currently, family arbitration is not widely known or utilized in the Italian context, and the project aims to address this gap. | | | academics and non-academics, without necessarily forming a formal partnership with universities. It adopts a more informal group structure. The three main partners are AIA - CAM - Arbitrando. The project also includes interaction and contacts with the major national-level specialized associations in family law. |
| 13 | DIPSA | Vera Lomazzi | European Values Study group (international network) | Studying values in a context of transitions | The project focuses on the conceptualization and measurement of values in several domains (work, morality, family, national identity, environment, politics, etc.), their analysis and comparison across European countries. In particular, it investigates values differences and similarities across European member states in light of the current economic, social, political, technological and environmental transitions. From the methodological perspective, the project includes an assessment and a critical review of the measurement of specific values, and of the implementation of mixed-mode of data collection (web survey, face-to-face, etc.) in the last edition of European Values Study to contribute preparing the future potential transition to web-panel in 2026. [The European Values Study is a large-scale, cross-national, repeated cross-sectional survey research programme investigating human values since 1981 and covering more than 35 countries.] | Conference of the European Sociological Association (Porto 26-29.08.24); Workshops of the European Values Study (eg., March 2024: Skopje-MK; October 2024 Brno - CZ), others TBD | Tilburg University (Netherlands), others to be defined within the EVS network | Tilburg University, FORS (Lausanne, CH), KU Leuven (BE), GESIS (DE), Università degli studi di Milano (IT), Università Cattolica del Sacro Cuore (IT), University of Warsaw (PL), Pázmány Péter Catholic University (HU), Institut d'études politiques de Grenoble (FR), Masaryk University (CZ), University of Bucharest (RO), University of Zagreb (HR), University of Lisbon (PT), University of Bilbao (ES) |
| 14 | DIPSA | Silvana Signori | EBEN - European Business Ethics Network | Value creation (and distribution) for stakeholders: insights from ESG ratings and Value Added accounting practice | This project aims to discuss the relation between two dimensions of corporate performance: ESG (Environmental, Social and Governance) performance and value creation for stakeholder. In particular, considering that most of the investors adopt ESG criteria in companies' evaluation, we would like to discuss if and to what extent ESG could be considered also a proxy of value creation for stakeholders, that is the essence of stakeholder management. Furthermore, we will refer to the concept of Value Added to emphasize that the generation of wealth in a company is the result of the "collective effort of all its | Participation to two conferences of the European Business Ethics Network (EBEN) in Athens in May 2024 and in Lugano in September, 2024. | Forse | University of Basque Country, Bilbao (Spain) Deusto University, Bilbao (Spain) |

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| | | | | | stakeholders, i.e. capital providers, employees, the government and society. With this project we aim to underscore the relations between these two measurement systems (ESG and Value Added). | | | |
| 15 | DIPSA | Mariarosa Scarlata | Management | Decertification drivers of Bcorp firms | <p>This project seeks to identify which factors lead firms that obtain the Bcorp certification to decertify. In fact, how organizations confront and manage prescriptions from diverging institutional logics has attracted scholarly attention. In hybrids, the values-based complexity arising from combining market-driven and socially focused institutional logics poses questions related to how organizational mission fits with organizational actions (Grimes et al., 2019). The B Corp certification has emerged as one means through which hybrids certify their values-based work (Gehman, 2019) and authenticate the consistency between actions with identity via external standards (Grimes et al., 2019). The process through which firms become B corps requires an identity-based reflective exercise whereby they continuously develop and implement a series of distinctive value practices that act as a reinforcing mechanism of the alignment between their actions and identity (Conger et al., 2018). Certification acts as an amplifier that allows the certified firm to communicate its commitment to social and economic value creation and the alignment between organisational mission and identity to internal and external actors.</p> <p>Despite the relevance of the B Corp certification, there is anecdotal evidence that some B Corps decertify. With decertification, a hybrid value-driven organization deliberately interrupts the process of authenticating its values and the value alignment between actions and identity (Grimes et al., 2019), a concept we label value misalignment or value alignment forbearance. As such, we ask the following research questions: what is the relationship between the level of the B-Corp hybridity and the likelihood of de-certification? And, what is the relationship between the internal and external impact of a B Corp and its likelihood of de-certification?</p> <p>The student will engage in data collection on the identity of Bcorps and develop algorithms to quantify values and actions. The student will have the opportunity to learn some of the most advances and increasingly used methods of data collection both in an academic setting and in professional sectors. These methods including topic modelling, natural language processing, collection of past web-based data over time, development of codebooks for measuring our key constructs and subsequent scale validation.</p> | Yes. 2024 BCERC, 20th Annual Social Entrepreneurship Conference, 2024 Academy of Management; Summer school in Causal Data Science for Business Decision Making @ CBS | Likely at GeorgeWashington University or other universities engaged in Bcorp and hybrid organizing work | The George Washington University |

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| 16 | DIPSA | Daniela Andreini | Marketing | Using unstructured social media data to understand and foresee market dynamics | The student will be involved in one of the several research activities that the Marketing Group is pursuing consisting in the collection and analysis of unstructured textual and visual data retrieved from online platforms. The group has several research projects in different stages of development dealing with disparate markets that are in their early stage of development like NFTs, Generative AI (e.g. ChatGPT), new double sided platforms, novel food, fashion, etc. The student will have the unique opportunity to learn the most advanced methodologies to scrape, collect and analyze unstructured data. The background learnt can be exploited either by those that are interested in an academic career as well as by those that aim at starting a career in a marketing department or in a market reseaech agency. | SIM (Società Italiana Marketing) annual conference, Ottobre 2024, Università IULM Milano. Global Brand Conference (2024) Location TBD | No | University of Liverpool, University of Portsmouth, University of Cardiff. |
| 17 | DIPSA | Giuseppe Pedeliento | Marketing | BUMOLDS: Business Model for L0cal Delivery Platforms | BUMOLDS is a project that has been awrded a research grant from the Italian Ministry of Research. The aim of the BUMOLDS project is to define a prototype of a local delivery platform that creates value by promoting and leveraging local resources while meeting local stakeholders' needs. Local delivery platforms are poised to generate profits at scale as they actively integrate multiple impacts on the society and the environment and put consumers at the core of their business model. Thus, local platforms differentiate from large ones, as they focus on environmental and social value drivers, and purposefully distance themselves from logistics, convenience, and other operational value drivers. | SIM (Società Italiana Marketing) annual conference, Ottobre 2024, Università IULM Milano. Global Brand Conference (2024) Location TBD Several meetings to disseminate the results will be organized as a part of the BUMOLDS project | No | |
| 18 | DIPSA | Rosella Giacometti, Gabriele Torri | Quantitative Finance group | Intra-Sectoral Performance-Constrained Portfolio Optimization for Green Index enhancement | The aim of the project is to develope an innovative portfolio model aimed at optimizing financial and sustainable performance relative to a green benchmark index. The model's distinctive approach involves incorporating intra-sectoral performance constraints to balance environmental and social impact within each sector. | OR 2024 germany , AIRO 2024 Location TBD ,EURO 2024 Location TBD | no | Ostrava University |

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| 19 | DIPSA | Argyro Elisavet Manoli | Marketing | 5 levels of sustainability in European football | The project intends to review the opportunities and barriers that national associations of football face when designing and implementing their sustainability strategies and practices. The project follows on from the work conducted on designing the 5 levels of sustainability in football framework, and aims to illustrate the applicability of the framework in practice. How sustainability is also promoted and communicated in each of these levels will also be explored within the project. The student will get be actively involved in the research project, by assisting in the data collection and analysis, using primarily qualitative methods. | SIM (Società Italiana Marketing) annual conference, Ottobre 2024, Università IULM Milano, with the work also being presented to the European Association of Sport Management conference 2024. | No | The project is conducted with the collaboration of the University of Lausanne and the University of Innsbruck. |
| 20 | DIPSA | Zanotti Giovanna | Finance | Reading Financial Information with Music | This project aims to understand the impact of non rational features on financial information documents. Most specifically use eye tracking technology to investigate where and how people direct their attention during the visualization of Kid Investor Information Documents (KIIDs). This will allow us to understand which are the part of the documents that better capture the attention of investors. Second, we compare the attention to KIIDs for participants by introducing music played in the background and we evaluate whether music may have a settling effect, an increasing gaze fixation or an eyeblinks when compared to stimuli without music. | FMA Annual Conference, 16-19 Ottobre Grapevine, TX or Australasian Finance and Banking Conference, Dicembre 2024 | no | no |
| 21 | DIPSA | Sergio Ortobelli Lozza | Quantitative finance | Financial applications of inverse optimization | The project intends to review techniques, solution methods, and model properties of different existing inverse optimization models examining their possible financial applications. In this framework, the project aims to consolidate an extensive list of possible financial applications in which inverse optimization can be used in practice. Moreover, the student will get be actively involved in the research project discussing and proposing inverse optimization models devoted either to portfolio selection problems or to price different risk sources. | Seguire alcuni seminari presso Unibg e a Milano. Possibilità di partecipare a convegno giugno-luglio EURO 2024 CPH (Copenhagen) o altri convegni tematici in Europa | no | VSB TU of Ostrava |
| 22 | DIPSA | Silvio Vismara | Finance | Inclusivity of digital entrepreneurua il finance | This project investigates how digitization impacts the functioning of entrepreneurial finance ecosystems. We aim to understand whether, to what extent and how digitization makes entrepreneurial finance ecosystems more inclusive, facilitating access to entrepreneurial (both seed and scale-up) finance by female and ethnic entrepreneurs, and entrepreneurs located far from great metropolitan areas. | ENTFIN conference, Munich, June 2024 | Yes, Technical University of Munich | Cosupervisor from Technical University of Munich or Ghent University |

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| 23 | DIPSA | Silvana Signori | | Sustainability in the University | The project aims to analyze the good practices conducted by universities in sustainability reporting, to verify possible areas of application also in the context of the University of Bergamo. The project therefore includes a part of theoretical research through which the concept of sustainability and its declinations for a company such as a university, to then study a possible practical implementation in the specific context of the University of Bergamo. | Participation in national and international working groups and conferences yet to be defined | To be defined | no |
| 24 | DISA | Alessio Cardaci | Lab_S.A.B.E. (Survey & Analysis of Built Environment) | 3D survey, knowledge and enhancement of the Bergamo fortress: the gate system | The project is based on the survey, knowledge, and valorisation of the Bergamo Fortress, which is now included in the UNESCO World Heritage List. The project's goal is to restore a glimpse of a significant part of its architecture, the city gates, in their original forms in the sixteenth century. All this is to understand the evolution of the place over six centuries of history. The actions implemented by the SABE laboratory will include the geometric-material survey based on the integrated use of different tools and different operational methodologies; From the use of traditional topographic instrumentation of active (3D laser scanner) and passive (digital photogrammetry) sensors, to 3D modeling and reconstruction of ancient architecture up to the production of informative video-renderings. Thanks to digital reconstruction and interactive virtual models, it will be possible to cross the ancient doors and visit their internal spaces; A journey through time, an unprecedented story in images in order to see the Venetian Walls with the eyes of a soldier of the Serenissima in the 16th century. The video-rendering will not be a simple virtual reconstruction, but an innovative study in the field of heritage representation; The wall textures, furnishings and weapons will be 3D scans of the still existing works and objects from the collections preserved in the museum. The virtual model and reality will be linked by an indissoluble bond, which will make the project a case study of particular interest. | Partecipazione al conferenza UID 2024, Padova-Venezia, 11-13 settembre 2024 | No | Università degli studi di Firenze |
| 25 | DISA | Passoni, Marini, Belleri | Tecnica delle Costruzioni | Project of wooden/steel or hybrid exoskeletons inspired by a Life Cycle Thinking approach for the integrated and sustainable redevelopment of existing buildings | The existing building heritage needs urgent recovery interventions from a seismic, energy and architectural point of view. The research group has been active for years in the development of exoskeletons for the integrated redevelopment of buildings. Furthermore, in order to achieve the new national and European sustainability objectives, these recovery interventions must be inspired by the principles of Life Cycle Thinking (LCT), in order to ensure disassembly, recyclability/reuse of the elements at the end of their life, damage reduction, etc. The student will have the unique opportunity to deepen one or more techniques for the construction of wooden/steel or hybrid buildings | World conference on Earthquake Engineering, Milan, 4-9 July 2023 (https://www.wcee2024.it/) | Yes, to be defined | We have various ongoing collaborations on this topic is European Universities (Greece, Portugal, UK) |

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| | | | | | exoskeletons for the seismic improvement of existing reinforced concrete buildings or masonry structures. | | | |
| 26 | DISA | Passoni, Palumbo, Marini, Belleri | Tecnica delle Costruzioni e Produzione edilizia | Design of seismic retrofit solutions for benchmark buildings and simplified LCA | The transition towards a low-carbon and sustainable construction sector is now recognized as a global priority. To this aim, a sustainable renovation of the existing building stock should be carried out. In order to define the real meaning of sustainable renovation, the scientific community is developing sustainable benchmark buildings to guide professionals in the design of sustainable solutions. In this study, some building archetypes will be identified, seismic and integrated seismic/energy retrofit interventions will be designed, and a simplified LCA will be carried out to assess the impacts of the retrofitting building along its life cycle. | World conference on Earthquake Engineering, Milan, 4-9 July 2023 (https://www.wcee2024.it/) ; WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE (WSBE24) (https://www.wsbe24.org/) | Yes, to be defined | We have various ongoing collaborations on this topic is European Universities: Universidad de Sevilla, HTWK Leipzig, University of Liverpool |
| 27 | DISA | Ferrari Rosalba (Gruppo Scienza delle Costruzioni) | Scienza delle Costruzioni / Mechanics of Materials and Structures | Digitalized life-cycle management of historic bridges by an integrated monitoring and modelling CDE platform | The proposed research investigation aims at establishing a comprehensive methodology for the design of efficient digitalized integrated platforms for a responsible monitoring and conservation of the "state of health" of specific constructions characterized by a significant historical and architectural value. In particular, the project focuses on important infrastructures, such as bridges, which are nowadays reaching their design life-span, bringing then down pressing queries of structural safety, efficiency and present load-carrying capacity. Amongst typical concerns, two particular aspects are taken for specific interest, from a structural point of view, namely current vibrational behaviour and presence of potential damage. | ECCOMAS CONGRESS 2024, 9th European Congress on Computational Methods in Applied Sciences and Engineering, 3-7 June 2024, Lisboa, Portugal and/or others - to be defined | Yes, to be defined | The project is being carried out in cooperation with research groups from ETH Zurich, and there are also plans for coordination with RTU (Riga Technical University) and possibly with Bauhaus-Universität Weimar. |

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| 28 | DISA | Daniela Giretti | | Interpretation of cone penetration tests in silty soils | <p>The CPTU is one the main in situ investigation tool for defining the ground conditions and for foundation design. Current practise in CPTU interpretation to estimate the in-situ void ratio is to use correlations between cone resistance, effective stress state and relative density for sands and silty soils. However, as these correlations are based on calibration chamber tests on clean silica sands under drained conditions, it is uncertain whether they can be applied for sands with fines and silty materials and for partially drained conditions. Site experiences have shown that when applied to estimate D_r for silty materials, the resulting D_r is too low respect to values measured on undisturbed samples. From the limitations above, the research questions arisen on what is the effect of fine content in sand (plasticity, grain size) on the penetration resistance and what is the effect of partial drainage on the correlation including fines. To answer this questions, the necessity of developing reliable correlations between q_c, stress state and void ratio, which takes into account fines content in sand, by running a series of laboratory calibration CPTUs, has come. The TIP project here proposed is aimed at interpreting a large database of calibration CPTUs in silty sands carried out in a geotechnical centrifuge. The results will be interpreted in order to establish a relationship between CPT tip resistance and state parameter, within a critical state framework, following the approach of Been and co-workers (e.g. Been et al., 1986, 1987). Analysis of the calibration data ill then follow a more rigorous approach based on cavity expansion theory, following Shuttle & Jefferies (1998), which provides predictive capability for the CPT once soil properties have been measured in the laboratory.</p> | XVIII European Conference on Soil Mechanics and Geotechnical Engineering in Lisbon, Portugal, from August 26th to August 30th 2024 | | |
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| 29 | DLFC | Nicola Morato | Seminario studi tardo antichi e medievali (SESTAM) | Métalepses médiévales. Metalepsis in Medieval literary culture and narrativity | The Fonds National Suisse project Métalepses médiévales (MétMéd, PI Marion Uhlig, Université de Fribourg) aims at fostering research work on metalepsis in the Middle Ages. Main research axis include 1) analysis of theorization provided during Antiquity, the Middle Ages and Renaissance; 2) presence of metalepsis in medieval literature, images or interactions between text and image; 3) investigating the specific performative value of medieval metalepsis as a core medieval narrativity device. Nicola Morato (reference UniBg staff), as a project member, is providing MétMéd with philological and narratological expertise especially in the field of Arthurian romance and Old French epic traditions, and will organise a mid-term project conference in Bergamo in 2025. Nicola Morato will take active part in the 2023 Fribourg conference as an invited speaker, and will ensure the full involvement of the student in the project activity before and after the conference, granting her / him the opportunity to meet senior colleagues, present her / his current research work, and to building a network that might support her / him in her / his future career. | International conference L'œuvre médiévale engendre son auteur (XIIe-XIIIe siècle) (Université de Fribourg, 13-14.06.2024) | No | MétMéd includes, other than the Université de Fribourg (host institution), project members from EHESS Paris and Paris-Sorbonne Nouvelle (France), UniGe (Suisse), University of Oxford (UK), DFG-Netzwerk Diachronic Metalepsis group (Heidelberg, Germany), and the University of Bergamo (Italy). |
| 30 | DLFC | Clizia Carminati | CMEMS (Classical, Medieval and Early Modern Studies) | Patronage of Arts and Letters 1590-1620: Rome, Siena, Milan, Turin and Digital Project "Arti sorelle" (PRIN 2017) | The project provides an introduction to research in the humanities through the study and digital cataloguing of (mainly poetic) compositions dedicated to the arts (in a broad sense: figurative, musical, performing, 'minor arts') of the 16th and 17th centuries. Students will have the opportunity to approach the texts of the modern age with an interdisciplinary perspective, studying both literary texts and works of art jointly, with the use of scientific bibliography and the most advanced digital tools. Students will learn to transcribe texts in modern, philologically controlled editions, to interpret them with particular attention to the vocabulary of the arts and the emotions aroused by the arts, and to use the back-end of the site. This project is also suitable for students who want to continue their studies with a PhD. | Students will be able to participate, either as auditors or with a short presentation of their research outputs, in the project's concluding conference to be held at the University of Siena in June 2024, in the presence of Italian and foreign scholars as well as the project director Prof. Carlo Caruso. | NO | si: Università degli Studi di Siena, Università Cattolica del S. Cuore di Milano |

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| 31 | DLFC | Maddalena Bonelli | ANT-CLASS (studi e ricerche sul mondo greco, romano e bizantino) | Women in the History of Philosophy (PRIN 2022) | The project is a part of the PRIN 2022 project 'Women in the History of Philosophy' and concerns the section 'Women Philosophers in Antiquity'. It takes the form of the construction of a reasoned doxography of ancient women philosophers and it will be divided into two parts: (i) the re-reading, cataloging and interpretation of all references to women philosophers in antiquity (limited to women who lived between the 6th century BC and the 5th century AD) and (ii) the search of criteria to establish in what sense women of antiquity were considered philosophers. | Students will be able to participate in all planned initiatives: 1) a reading group on ancient women philosophers; 2) a conference, organised in the University of Bergamo in 2024, on 'Wisdom in women philosophers, poets and queens of classical Greece'; 3) a conference, to be held at the University of Calabria, on 'Women and the history of ancient, medieval and modern philosophy'. | NO | SI: Università della Calabria (partner PRIN 2022) |
| 32 | DLFC | Riccardo Saccenti | Seminario studi tardo antichi e medievali (SESTAM) | TeLPh. Teaching and Learning Philosophy in the Regnum Italiae (1250-1450): from Exception to European Heritage (PRIN 2022) | The project intends to offer an innovative explanation of the fact that late medieval philosophy of the Regnum Italiae used the same Parisian tools, such as the Latin language, Aristotelian corpora, and teaching based on lecture and dispute, but evolved into diversification and plurality. This 'exception' might be further tested in the wider European context to verify how much different linguistic, political, economic, and intellectual factors shaped local peculiarities within the cultural unity throughout Latin Europe. TeLPh aims to give a radically new account of the form, spread and impact of philosophical teaching and thinking during late medieval and early modern Europe by focusing on (1) the urban context of 14th-c. northern and central Italy within and outside the academic institutions, in order to trace the developments of (2) the disputational practices, (3) the mathematical sciences and 'quadrivium', (4) the arts of the 'trivium', and (5) ethics as the subject of university teaching and public discourse. | Students will take part to the conferences and workshops organize by the project as well as to the occasion of dissemination of the results. | No | The project involves research units from the universities of Roma Tor Vergata, Bologna, Trent and Udine, together with Bergamo. This will offer the possibility to built cooperation with these universities as well as with other relevant see, since the project is linked with relevant international research networks (Societas Aristarum, SIEPM, SISMEL, DARIAH). |

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| 33 | DLFC | Clizia Carminati | CMEMS (Classical, Medieval and Early Modern Studies) | Cultural communities and books of verse: the Italian context (PRIN 2022) | The project provides an introduction to research in the humanities with a focus on 17th century Italian poetry. Students will be able to participate in all phases of the project, which was just launched in October 2023, i.e.: a census of 17th-century poetry collections, the cataloguing of individual collections on the University of Lausanne's Lyra website, the study of one or more particular collections in order to define their structure, themes, texts, with a view to a critical study or annotated edition. Students will acquire research skills using the most advanced digital tools and will develop skills in book history, history of literature and poetic forms, and history of ideas in the early modern age. This project is also suitable for students who want to continue their studies with a PhD. | Students will be able to participate in seminars organised in Italy in 2024 (at the moment, one seminar is planned in Bergamo and one in one of the other universities indicated) | yes: students will be able to stay for a short period at the University of Lausanne, to meet the Lyra team (Prof. Simone Albonico, Dr Giacomo Stanga, Dr Amelia Juri) and get to know all the projects underway at Lyra, including, in particular, the project on Poetry and History in Early Modern Age. The university will provide tutorials and lectures but not free accommodation. | si. Italian partners (PRIN): Università di Trento, Università di Genova, Università Cattolica del S. Cuore di Milano, Università di Siena. Foreign partners: prof. Simone Albonico (Lausanne), prof. Bernhard Huss (Berlin), prof. Carlo Alberto Girotto (Paris), prof. Jesùs Ponce Cárdenas (Madrid). |
| 34 | DLLCS | Federica Burini | | TOWARDS A TERRITORIAL AND NETWORK REGENERATION OF THE SCALVE VALLEY: a new tourism for a new way of living | The project, triggered by an initiative of the Scalve Mountain Association, intends to offer scientific and technical support to institutional, associative and economic actors, as well as to the inhabitants of the Val di Scalve, to start a process of territorial development also from a tourism perspective in sustainable optics. It involves starting a partnership between the University, local public administrators and private and associative entities, aimed at promoting co-planning aimed at highlighting the development opportunities of the Valley both for their specificities and identity characteristics (resources, material heritage and immaterial), and for phenomena based on a network of territories in the Valley that create development opportunities (agro-forestry-pastoral activities, tourist and holiday flows, productive activities, etc.). | Yes, to be defined | | |

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| 35 | DLLCS | Federica Burini e Alessandra Ghisalberti | | SOCIO-TERRITORIAL STUDY AND ACTIVATION OF A CO-PLANNING PATH FOR THE NEW LOCAL DEVELOPMENT PLAN 2023-2027 OF THE GAL DEI COLLI DI BERGAMO AND CANTO ALTO | The project intends to provide scientific support to the GAL dei Colli di Bergamo and Canto Alto to start a study of the socio-territorial aspects of the area of interest and the activation of a process of involvement of the various stakeholders of the area, for the new Local Development Plan (LDP) 2023-2027. It involves supporting a strategic phase for the LAG in the launch of a new governance process, implementing the new strategic and integrated territorial development strategy, in the name of sustainability, shared by the interested parties. More precisely, the project includes two areas of development: 1) Socio-territorial study of the new area of supra-municipal interest and 2) Co-planning for the new PSL in order to respond to future needs. Both areas will be divided into modular work phases. | Yes, to be defined | | |
| 36 | DSE | Rosario Crinò | | Automation and artificial intelligence: determinants and effects | The project aims to analyze the effects of adopting industrial automation technologies (robots) and artificial intelligence (AI) on the labor market, with particular attention to the impact on overall employment levels and wage inequalities, and on firms' participation in global value chains (GVC), with a specific focus on the analysis of the relationship (complementarity/substitutability) that exists between GVCs and automation/AI technologies. The project addresses both themes empirically. To this end, the project involves an intensive activity planned to collect new micro-data at the firm, firm-worker (matched employer-employee data), and local labor market levels. The analysis of these data will be carried out through the application of advanced econometric techniques and the use of statistical software such as R and Stata. It is expected that the project will produce valuable results for the design of effective industrial policies, taking into account potential adjustment costs due to the adoption of new automation and AI technologies. This proposal is related to the PRIN 2022 project titled "AUTOMation, PROductivity and Wage INequality (AUTOPROWIN): Firms and Workers in Times of Economic Turmoil". | Partecipazione ai seminari organizzati dal Dipartimento di Scienze Economiche. Partecipazione al convegno del progetto PRIN 2002 dal titolo "AUTOMation, PROductivity and Wage INequality (AUTOPROWIN): Firms and Workers in Times of Economic Turmoil", a cui è collegata questa proposta progettuale | no | Università di Chieti-Pescara, Università di Siena, Università di Palermo (componenti del gruppo di lavoro del progetto PRIN 2022 "AUTOMation, PROductivity and Wage INequality (AUTOPROWIN): Firms and Workers in Times of Economic Turmoil". |

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| 37 | DSE | Gianmaria Martini; Laura Ogliari; Davide Scotti | Research group on Air Transportation Economics | The Effects of Cooperation on Price and Quality of Air Services | The project aims at measuring the effects of airline cooperation on efficiency, fares and quality of the service (e.g., measured in terms of frequency and travel time). The objective of the research is to unveil heterogeneous effect of cooperation in different areas of the world (developing countries vs developed ones). | Partecipazione ai seminari organizzati dal Dipartimento di Scienze Economiche. Partecipazione ad alcune tra le principali conferenze annuali nazionali e internazionali, come quelle organizzate dall'ITEA (International Transportation Economics Association), dall'ATRS (Air Transport Research Society), dalla SIET (Società Italiana di Economia dei Trasporti e della Logistica) e dalla SIEPI (Società Italiana di Economia e Politica Industriale). | No | |
| 38 | DSE | Stefano Coniglio | | HEXAGON | The project's goal is to develop a global-optimization solver for tackling the Mixed Integer Alternating Current Optimal Power Flow (MI-ACOPF) problem—the extension of the Alternating Current Optimal Power Flow (ACOPF) featuring discrete variables (line switching, transformer tap changers), focusing on dispatch and redispatch. The aim is to close the solution-quality gap between traditional local-optimization methods and what can be achieved by capitalizing on the huge improvement of discrete nonlinear optimization techniques (of spatial branch-and-bound type) in recent years. This will be achieved by building a new global MI-ACOPF solver to handle efficiently and without approximations the Power-Flow constraints in an effort to replace legacy heuristic code. This proposal is related to the PRIN-PRR 2022 project "HEXAGON: Highly-specialized EXact Algorithms for Grid Operations at the National level". | Partecipazione ai seminari organizzati dal Dipartimento di Scienze Economiche. Partecipazione ai workshops organizzati nell'ambito del progetto HEXAGON. Partecipazione ad alcune tra le principali conferenze annuali nazionali e internazionali nell'ambito dell'ottimizzazione matematica, quali ISMP (International Symposium on Mathematical Programming), ODS (Optimization and Data Science), e ICOPT (International Conference on Continuous Optimization). | No | Politecnico di Milano, Università degli Studi di Pavia, Università degli Studi del Sannio |
| 39 | DSE | Stefano Coniglio | | ST-GCN | The project aims at extending the theory and practice of spectral Graph-Convolutional Neural Networks (GCNs), of the underlying convolution operator, and of the related graph Laplacian to the case of dynamic (time-varying) graphs - graphs whose topology and nodal/edge information evolves dynamically over time. Among others, the project will also see the prediction of air traffic as its key practical case study. The successful postdoctoral researcher will work on the theoretical aspects of the project as well as on its implementation in machine-learning frameworks such as PyTorch and TensorFlow. | Partecipazione ai seminari organizzati dal Dipartimento di Scienze Economiche. Partecipazione ad alcune tra le principali conferenze annuali nazionali e internazionali nell'ambito dell'ottimizzazione matematica, quali ISMP (International Symposium on Mathematical Programming), ODS (Optimization and Data Science), e ICOPT (International Conference | No | |

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| | | | | | | on Continuous Optimization). | | |
| 40 | DSE | Annamaria Bianchi | | Measuring inequality, poverty and living conditions | This proposal is related to the PRIN PNRR 2022 project entitled "Measuring inequality, Poverty and living conditions for Planning Local strategies" (MYPEOPLE). MYPEOPLE aims to address the consequences of the recent crises on people well-being, social inclusion, lifestyles and behaviours in order to monitor the worsening living conditions of people already vulnerable to poverty and discover new people asking for social and financial help, especially among the middle classes. The focus is on three Italian regions (Lombardia, Toscana, and Campania) that represent three important areas of the North, Centre and South of Italy where the quality and conditions of life are considerably different. Within the MYPEOPLE project, probability-based surveys will be conducted in the three regions (spring 2024). The proposed project aims to prepare and analyse the collected data. Data preparation will entail data cleaning, imputation, and calibration as well as metadata description. The analysis will be devoted at developing statistics, indicators and statistical models to measure the effects of the crisis on household living conditions from a multidimensional and interregional perspective referring to different domains and specific target groups. | Partecipazione ai seminari organizzati dal Dipartimento di Scienze Economiche. Partecipazione a conferenze nazionali e internazionali, quali quelle organizzate dalla Società Italiana di Statistica (SIS), dalla Società Italiana di Economia, Demografia e Statistica (SIEDS), dallo European Consortium for Informatics and Mathematics (ERCIM) Working Group. | No | Università degli Studi di Siena, Università "Carlo Cattaneo" LIUC, Università degli Studi di Napoli Parthenope |