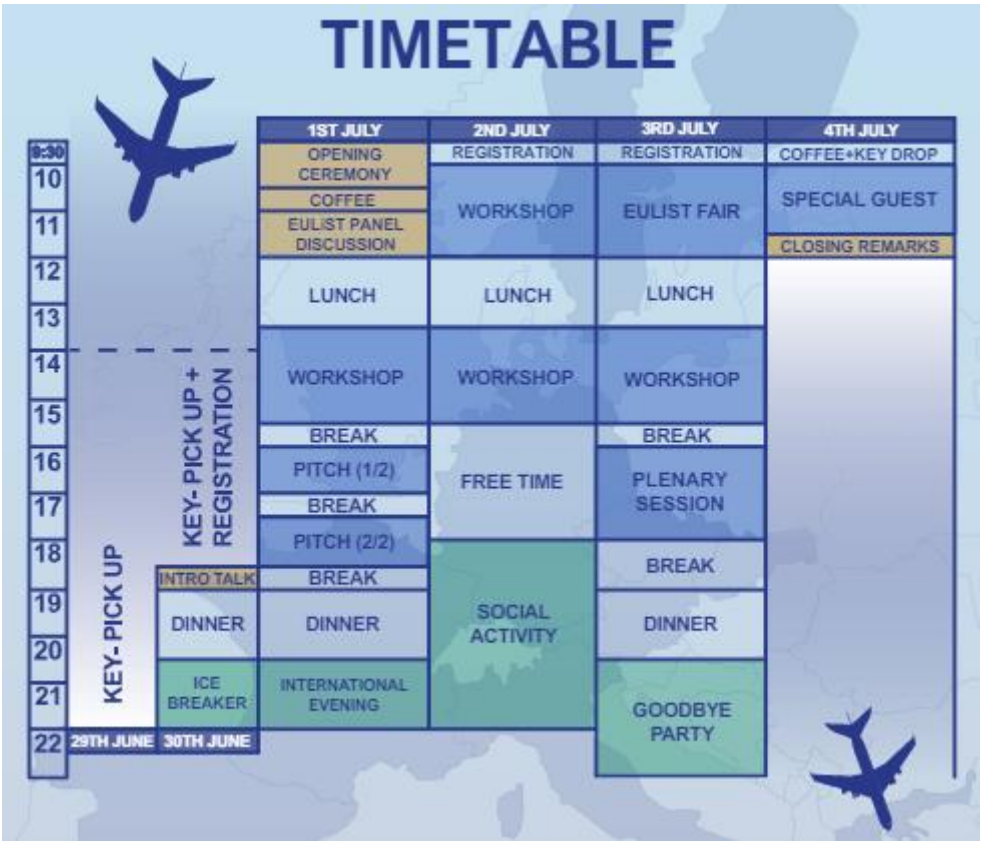
Program



Opening and Closing Events

The opening and closing events, highlighted in yellow, will feature speeches from key members of the EULiST alliance. More specifically:

- **Opening Ceremony:** Official welcome and keynote address [*Monday, July 1st, 9:30-10:00; Prechtlsaal / The Long Hall*]
- **EULiST Panel Discussion:** Introduction to "What is EULiST" [*Monday, July 1st, 11:00-12:00; Prechtlsaal / The Long Hall*]
- **Closing Remarks:** Reflections on the conference and the way forward [*Wednesday, July 3rd, 11:30-12:00; Kuppelsaal / The Dome*]

Workshops

In the workshops, you'll be divided into smaller groups of approximately 20-40 students for interactive sessions designed to enhance your critical thinking as well as your soft and hard skills. Topics will focus on **linking society and technology**, covering areas such as *sustainability, architecture and urban planning, materials, artificial intelligence, digitalization, robotics, augmented reality, nanotechnology, factory systems, clinical decision making, research, education, student mobility, career counselling and presentation skills* among others.

In this section, you may find detailed abstracts of the workshops offered, along with brief biographies of our esteemed invited speakers. We hope this guide will help you make informed decisions about which workshops will best broaden your horizons, improve your skills and accelerate your professional growth. Dive in to explore the diverse topics and expertise that await you at this first EULiST Student Conference!

Students' perspective to Teaching and Learning in the EULiST Alliance

Date: Monday, July 1st
Time: 13:30-15:30

Room: Athens
(SITZUNGSZIMMER ADEG)

Student engagement is a crucial factor in all topics covered by WP3. In this workshop, the students' expectations of the teaching and learning programmes in EULiST will be discussed, as well as the necessary framework conditions to enable mobility in the spirit of the Alliance.

Lecturer: Shabnam Michèle Tauböck

Lead of the Workpackage 3 (WP3) in EULiST Alliance for TU Wien: Teaching & Learning

The 5 Task Groups in the WP3 cover any topics concerning teaching & learning in the EULiST Alliance: The EULiST Alliance will promote flexible teaching formats, including micro-credentials, micro-degree programmes, joint modules, and joint degrees that will enable all students to integrate EULiST into their studies. EULiST will emphasise challenge-based learning, international collaboration, and transdisciplinarity and will promote knowledge building in all STEM and SSH disciplines.

The EULiST Citizen Science Office and open door events will engage non-traditional learners and the public, broaden student recruitment, and embed the university in the

community. Digitalised processes will facilitate mobility, admissions, and credit transfer, and will enable students to personalise their study plans.

Urban MYCOskin: New European Bauhaus Prize

Date 1: Monday, July 1st
Time 1: 13:30-15:30
Room: Hannover (SEMINARRAUM AE U1 – 1)

Date 2: Tuesday, July 2nd
Time 2: 10:00-12:00

Urban MYCOskin is an international project developed by Rita Morais, Natalia Piórecka, and Jennifer Levy at the Bartlett School of Architecture's Bio-ID Lab. This project utilizes mycelium to convert waste into sustainable architectural systems, improving human comfort and plant growth through an environmentally informed design approach.
Awarded the New European Bauhaus Prize 2024 for its pioneering use of mycelium-based materials in circular industrial ecosystems, Urban MYCOskin has also been featured in international exhibitions. This workshop provides an in-depth exploration of bio-integrated architecture, showcasing the advanced materials and technologies that blend biology and design to create resilient systems for climate change adaptation.

Lecturers: Rita Morais & Natalia Pirocka

Natalia Piórecka and Rita Morais bring together a diverse set of skills from architecture, design, and science to address environmental challenges through innovative biodesign solutions. Their combined expertise in biomaterials, environmental studies and digital technologies has been crucial in pushing the boundaries of sustainable design.

Rita, a Portuguese interdisciplinary researcher, biodesigner, and artist, is passionate about merging biology with digital technologies to propose sustainable solutions. Her work is centered on exploring the potential of bio and living materials through scientific

exploration, computational design, and environmental simulations. Rita pursued a Master of Architecture in Bio-Integrated Design from UCL's Bartlett School of Architecture, following her Bachelor's in Business from Nova SBE, in Lisbon.

Natalia is Polish, interdisciplinary designer and researcher with a strong focus on biodesign and sustainable development. Her work centers around bridging architecture with scientific advancements, aiming to redefine conventional approaches to design and ecology. She holds a Bachelor's degree in Architecture from Newcastle University and a Master's degree in Bio-Integrated Design from the Bartlett School of Architecture at UCL, winning the "Bartlett's Best MArch Award". Her work focusing on working with living organisms like mycelium or bacteria and robotic fabrication have earned her recognition, including a feature in Forbes' "25 under 25" or awards like Green Product Award of IF Design Award.

"Fresque de l'Eau" - Water frescos

Date: Monday, July 1st
Time: 13:30-15:30

Room: L' Aquila (SEMINARRAUM AEEG - 1)

The "Fresque de l'Eau" is an educational workshop designed to raise awareness about water-related challenges. It aims to help participants understand the complexities of water management, including issues like pollution, scarcity, and the impact of human activities on water resources. Through interactive activities and collaborative discussions, the workshop educates attendees on sustainable water use and encourages proactive measures to protect and conserve water for future generations.

Lecturer: Ingrid Bazin

Teacher-researcher at IMT Mines Alès, specializing in environmental and societal responsibility. My research focuses on the development of innovative biosensors for monitoring water quality, particularly in detecting herbicides. For over four years, I have been leading the DDRS policy at IMT Mines Alès and became the Director of Transitions in January 2024 at IMT.

Discover your career potential – from planning to applying

Date 1: Monday, July 1st
Time 1: 13:30-15:30

Room: Madrid (SEMINARRAUM ACO2 - 2)

Date 2: Tuesday, July 2nd
Time 2: 13:30-15:30

Are you looking for a job or would you like to find out more about career planning and applications?
In this workshop, you will benefit from tips from HR experts from the TU Career Center.
In the application workshop you will learn
- how you can approach your job search
- how to design application documents (CV, letter of motivation)
- how you can prepare for job interviews
- how you can present yourself and your skills in an application context

Lecturers: Tanja Elgendy - Tina Landreau

TU Wien Career Center

Scientific Knowledge Graphs: Theory and Applications

Date: Monday, July 1st
Time: 13:30-15:30

Room: Kigali (SEMINARRAUM DB Gelb 05 B)

Scientific Knowledge Graphs (SKGs) are a means to store metadata, such as bibliography, and content of scientific literature. They have been powering various applications, such as Question Answering Systems and Research Discovery & Exploration. Such applications serve the use case of literature search. In this workshop, we want to introduce and describe Scientific Knowledge Graphs and give real-world examples including access and download possibilities. Furthermore, we want to look at a few of the aforementioned SKG-based applications that can enhance literature search, making it more structured and giving better overviews of connected literature.

Lecturer: Filip Kovacevic

Filip Kovacevic is a PreDoc researcher in the third year at TU Wien, specializing in Scientific Knowledge Graphs and RDF data versioning. His research aims to improve scientific methods and facilitate the work of researchers. He has gained experience in automating processes such as systematic literature reviews and novelty detection in scientific literature. Currently, he is exploring various LLM-based methods to represent the contents of scientific papers in a more structured way.

Presentation Skills: "Dare to impress" level unlocked

Date 1: Monday, July 1st
Time 1: 13:30-15:30

Room: Sydney (SEMINARRAUM DA Gr ün 03 A)

Date 2: Tuesday, July 2nd
Time 2: 13:30-15:30

Are you ready to take your public speaking to the next level? This interactive workshop is designed to elevate your presentation skills and boost your confidence when facing any audience.

Join us as we explore the art of public speaking, covering key elements, such as:

Body Language: Surprisingly, more than 50% of effectively communicating our message depends on body language. So how do we leverage body language to assert confidence and presence? From confident gestures to maintaining eye contact, you'll learn the secrets of nonverbal communication.

Tone & Pace: Use your voice to enhance your message. How we convey our message is almost 40% of a successful delivery. Adjust your tone and pace, and hit the right pitch to keep your audience engaged.

Audience Interaction: Engaging with your audience is crucial. Together we'll practice techniques to strategically manage audience interactions, handle interruptions, and maintain engagement throughout your presentation.

But that's not all! In a unique twist of the classic “Truth or Dare”, the workshop will be in the form of a **“Do You Dare?” Card Game,** that is sure to keep you on your toes. Each card is designed to help you practice and refine your skills in a supportive and fun environment.

And worry not! Our trainers will be by your side, guiding you every fun step of the way and providing valuable feedback.

So, are you up for the challenge?

Lecturers: Vasilis Loukadakis, Doris Skenderas, Magda Mylona, Nikolaos Antoniadis, Konstantinos Stellakatos-Loverdos

Mi.M.E.C.

Mi.M.E.C. is a volunteering team founded by students of the National Technical University of Athens (School of Mining & Metallurgical Engineering), devoted to bridging the gap between hard and soft skills. Our mission is to provide students with the opportunity to develop critical skills for the challenges of tomorrow. Since 2021, we have organized 15 virtual and in-person events, gathered more than 680 applications, and grew more than twice our size. Our events are focused on soft skills such as communication and presentation skills, negotiations, critical thinking, and teamwork. Partners that have supported us include representatives from the Council for Sustainable Development of Hellenic Federation of Enterprises (SEV), Region of Attica, HR Agencies, as well as Professors and Volunteering teams of NTUA.

Linking Society and Technology through Research for Impact

Date: Monday, July 1st
Time: 13:30-15:30

Room: Vienna (SEMINARRAUM AA02 - 1)

Creating meaningful change in society is an increasingly relevant skill for researchers. Think of your research and studies path - what values drive you toward the future of science? How do you scope perspective research areas to create impact and address grand societal challenges?

In this workshop, we will introduce you to the Special Interest Group “Frontiers of Impact” within global ISPIM innovation community and use the Scoping Emerging

Research Context Canvas to identify in multidisciplinary groups emerging areas of research for impact. Examples of such areas, which we call the new frontiers, are digital and green transition, healthcare innovation, quantum technology, AI, and other societally relevant topics.

The aim of this workshop is to support EULiST consortium members (students, research and innovation staff) in developing multi-disciplinary collaboration and impact skills.

Lecturer: Kateryna Kryhanivska

Kateryna Kryzhanivska is a PhD Candidate at LUT University, Business School. She researches open and collaborative innovation practices on digital platforms in the context of grand societal challenges, such as digital and green transition, resilience towards global pandemics, and the current geopolitical crisis. Kateryna is actively involved in research for impact and co-leads a Special Interest Group "Frontiers of Impact" within the global ISPIM innovation community.

Multisensory experience of a public space

Date: Tuesday, July 2nd
Time: 10:00-12:00

Room: Brno (SEMINARRAUM AE U1 - 2)

In this workshop, participants will learn how specific features of urban environments connected to the concept of the 7 senses derived by Juhani Pallasmaa (sight, hearing, smell, touch, taste, balance, proprioception) are essential to perceive it clearly and coherently. Those features include size, proportion, light, colour, sound, texture, resonance, etc. During the class, students will take part in the survey which will be used for both scientific and educational purposes.

Learning Goals

Performing this workshop serves as an educational tool for the development of sensitivity towards the environment, to study the sensory experience of the space.

This way, students will manage to learn:

- how to apply what they have experienced during the workshop in the design practice;
- how to design spaces that are more engaging and enriching;
- how to create innovative tools and strategies for design based on a new understanding of sensory experiences.

The workshop description

The workshop will take place in two locations: in the auditorium and outside on the territory adjacent to the building. It will involve five steps (the first two are inside, the others are outside):

1)Lecture
30-minute lecture about the importance of all the senses for public space perception.

2) Photo evaluation: The participants will be given a picture of a public space and its map. They will be asked to write a short essay (3-4 sentences) with any thoughts they have about this space.

3) Field study: Participants will be divided into teams, with each team split into two small groups of 3-4 people. Each group will explore different sections of a public square. The first group will have their eyes covered and ears plugged. This way, they will need to explore the space without the ability to see, hear, or both. The second group, at the same time, will not have such limitations and will investigate the environment using all the senses. After 5-8 minutes of doing so, the groups will switch.

4) Survey: After each exercise, all the participants will be given a short questionnaire with 3-4 open questions aimed at describing their perception and the emotions which they experienced while performing each experiment.

5) Round Table discussion: When the whole experiment finishes, the members of the entire team will come together to discuss their observations and impressions. They will also be asked about how they would apply to the design process the things they learned while performing the exercises.

During the discussion, the following questions can be considered:

- How can you apply your new understanding of multisensory perception and emotions in space to create a more enriched and engaging environment?
- How would you design the qualities of the space to positively influence perception and emotions? These qualities can include visual appearance, sounds, scents of materials, textures and temperatures of surfaces, air quality, scale and layout of the space, and balance influence.

- How might your methods of representation and other design tools need to evolve to achieve these goals?

Participants are encouraged to invent new design tools and strategies, including innovative methods of representation, during the round-table discussion.

Lecturer: Valentina Fesenko

Valentina Fesenko is a PhD/DLA student and teaching assistant at the Department of Urban Planning and Design at the Faculty of Architecture, Budapest University of Technology and Economics. Her research focuses on assessing the quality of public spaces in terms of human experience.

With 10 years of professional experience in architecture, Valentina has worked with various architecture and construction companies. Her responsibilities have included designing residential, industrial, and public buildings at various stages, from developing initial sketches to creating execution plans.

Valentina holds a Bachelor of Architecture and a Master of Science in Architecture from Voronezh State University of Architecture and Civil Engineering, as well as a Master of Science in Architecture Engineering from Budapest University of Technology and Economics. She actively participates in architectural contests and has won several prizes.

Green Skills in Practice: Empowering a Sustainable Future

Date 1: Tuesday, July 2nd
Time 1: 10:00-12:00
Room: Bratislava (SEMINARRAUM AE U1 - 3)

Date 2: Wednesday, July 3rd
Time 2: 13:30-15:30

This interactive workshop is designed to equip participants with essential skills in Root Cause Analysis (RCA), as a critical tool for identifying and addressing underlying causes of environmental challenges and sustainability issues. By focusing on RCA, participants will learn how to systematically approach problems, ensuring sustainable and effective solutions. The workshop includes both theory and practice.

Lecturers: Christos Kalantzis, Panagiotis Tatoulis

envinow.gr

ENVINOW.GR is a youth initiative launched in 2018 by students of the National Technical University of Athens (NTUA). Its current editorial team includes more than 30 participants from seven NTUA Schools and other Universities. Its content includes news, articles, scientific reports, interviews and legislation. The team also addresses questions posed by the readers, covering the whole range of environmental issues. Another axis of activity of the group is the implementation of projects and actions of environmental interest. Such examples are the organization of workshops or informative and networking events, but also the team's research activity in collaboration with other stakeholders.

The team also aims at putting environmental issues to the spotlight while offering responsible and practical information to the public. In simple terms, it acts by endorsing green actions, presenting solutions to daily and specialised issues through the emergence of sustainability methods as an evaluation guide. Since its launch, ENVINOW.GR has been open to both the public, the scientific community and the corporations. Thanks to its unbiased content, Envinow.gr has become the biggest online environmental community in Greece since summer of 2020!

Club of unseen monuments. A question of social and ecological visibility in architecture and urban planning

Date: Tuesday, July 2nd
Time: 10:00-12:00

Room: Lappeenranta (SEMINARRAUM AE U1 - 6)

The increasing presence and demands of climate activists and experts throw a harsh light on the pressing problems we face. Global warming, once considered a distant phenomenon, has been at our doorstep for a while now. Nobody is in favour of global warming - yet processes and acceptance for change outside our own comfort zone seem to be very tough. A social rethink and a redefinition of values are therefore required. A broader perspective that understands humans people as part of an overall system and includes overlooked factors or organisms and recognises their visible value. While the effects of climate change are becoming ever clearer, cities in Germany and their residents are further struggling with complex problems. The lack of affordable housing is one of them. The ironic fact that the industry creating housing is one of the biggest contributors to CO2 emissions, is a dilemma. The lack of affordable

housing is leading to gentrification and segregation of the city, resulting in a huge change in the population structure. It is important to recognise and discuss that the creation of affordable housing and the development of climate-friendly cities are not contradictory goals, but must be considered together.

To manifest this synergy, monuments need to be uncovered. The unseen monuments of our time make our cities and their surroundings liveable and habitable, they must be recognised and protected. How do we find these new monuments and what factors make our environment vibrant and liveable? What challenges do we have to face and what skills do we architects need for this? How do we want to live and what goals and values can we define together? An open discussion and a joint drafting of first ideas about who or what could join the club of unseen monuments.

Lecturer: Anna Pape

Anna Pape works in the fields of architecture, urban design, graphics and art. Her work focuses on the theme of the just city in terms of social and ecological aspects. She is currently working with raumlaborberlin on the topics of real estate policy oriented towards the common good. As well as she is a researcher at Leibniz University Hannover on the EU project CiD.circular design for the interdisciplinary development on how to link design with circularity and urban transformation within new learning/teaching formats and materials to connect the education and research environment.

Deepfakes and their security impacts

Date 1: Tuesday, July 2nd
Time 1: 10:00-12:00

Room: Jönköping
(SEMINARRAUM AE U1 - 7)

Date 2: Wednesday, July 3rd
Time 2: 13:30-15:30

Deepfakes, a portmanteau of the words "deep learning" and "fake," are a subset of synthetic media (including voice, video, images, or combinations thereof). These creations are generated by deep neural networks and depict events that never actually

happened. Although they have potential positive applications in industries such as filmmaking and education, deepfakes have gained considerable attention primarily because of their potential negative impacts. They can be misused for individual defamation, spreading false information, as well as for attacks on biometric authentication systems, vishing, or other types of fraud.

This workshop will introduce the different types of deepfakes, delve into methods of creating and detecting them, and explore their impact on IT security. Through interactive demonstrations, attendees will gain practical insight into the world of deepfakes and learn strategies for identifying them and techniques for mitigating risks. Join us for an engaging session that combines theory with interactive demonstrations to give you a better understanding of this critical technology and its security challenges.

Lecturer: Kamil Malinka

Kamil Malinka currently works as an assistant professor at the Faculty of Information Technology at Brno University of Technology and is the head of the Security@FIT research group, which primarily focuses on computer security. His current research interests include security implications of AI and usable security.

Nanotechnology at the frontiers: imaging of the future

Date: Tuesday, July 2nd
Time: 10:00-12:00

Room: Madrid (SEMINARRAUM ACO2 - 2)

Smaller, better, faster, stronger. Not quite Daft Punk, but rather the societal expectations for future technology. The trend of miniaturizing our everyday devices is hitting its limits as electronics can't be made much smaller than it already is today. Therefore, we are now focusing on the miniaturization of optical components. This session will explore how nanotechnology can manipulate light, paving the way for future advancements in imaging technology.

Lecturer: Katarina Rovenska

Hello, I'm Katarina, a fourth-year doctoral student in nanotechnology at the Central European Institute of Technology in Brno, Czech Republic. I have been involved in nanophotonics research for eight years, focusing on light-matter interactions and specializing in the fabrication and characterization of nanostructures for optical applications. I am passionate about promoting science to all kinds of audiences and am always keen to inspire curiosity and a love for scientific advancement.

Introduction to (Research) Data Management

Date: Tuesday, July 2nd
Time: 10:00-12:00

Room: L' Aquila (SEMINARRAUM AEEG - 1)

Understanding research and data lifecycles is foundational in many work settings, not limited to academia. In this workshop we give an overview of research and data lifecycles, review data management practices and give an understanding on how to differentiate between different data and software licence types. We explain the use of persistent identifiers, such as DOIs (Digital Object Identifiers), the FAIR principles for data (Findable, Accessible, Interoperable, and Reusable) and how to apply them by means of metadata and standards for efficient (research) data management. We will also describe the components of a Research Data Management (RDM) infrastructure, discussing differences between repository systems. All these topics will help with understanding the challenges of digital data preservation, of planning and implementing reproducible experiments, as well as the application of Open Science principles.

Lecturers: Tomasz Miksa, Florina Piroi

Tomasz Miksa is a Senior Scientist at TU Wien, Centre for Research Data Management and Faculty of Informatics. He works in digital transformation for research data management, making data management more automated and machine-actionable. This includes improving the interoperability of research data repositories and ensuring data is FAIR (Findable, Accessible,

Interoperable, and Reusable) and reproducible. He is an experienced researcher in the domain of data management and has a PhD from TU Wien on the "Verification and Validation of Scientific Workflow Re-executions".

Florina Piroi is Senior Scientist at TU Wien, Centre for Research Data Management and Faculty of Informatics. She is involved in interdisciplinary and Industry related projects in the domain of data science, focusing specifically on data analytics / machine learning and underlying processes. She has received her PhD degree from the Johannes Kepler University, Linz, Austria, where her work concentrated on management and retrieval of mathematical knowledge and automatic theorem provers. She is also an Information Retrieval researcher with experience in domain specific search and search engine evaluation.

The Community Life Competence Process (CLCP) and SALT Process in Science and Technology

Date: Tuesday, July 2nd
Time: 10:00-12:00

Room: Vienna (SEMINARRAUM AA02 - 1)

Objective:
The objective of this workshop is to introduce technology students to the principles and practices of the Community Life Competence Process (CLCP) and SALT (Stimulate, Appreciate, Learn, and Transfer) and to explore how these approaches can be applied to understand and develop sustainable, community-driven technological solutions in the community level.

Learning objectives:

- Participants will gain a brief understanding of CLCP and SALT processes.
- Participants will learn how to apply community-driven approaches to technology development.
- Participants will gain enhanced skills in community engagement and participatory project planning.

Overview:
The Community Life Competence Process (CLCP) and the SALT (Stimulate, Appreciate, Learn, and Transfer) are participatory approaches that aim at community change. These approaches are meant to empower communities, igniting a spark of self-reliance and resilience and enabling them to take charge of their development

outcomes through grassroots action. CLCP is a framework that guides facilitators (from NGOs, government officials, and community leaders) communities through steps to identify their strengths, set goals, develop action plans, and monitor progress over the long term. CLCP emphasizes the community's ability to find local solutions to challenges by leveraging their resources and knowledge.

SALT is an integral component of CLCP and stands for Stimulate, Appreciate, Learn, and Transfer. This process involves stimulating community members to reflect on their experiences and identify their strengths, appreciating these strengths and the efforts made by individuals and groups within the community, learning from these experiences to build on what works, and transferring knowledge and successful practices to others within the community or to other communities.

In science and technology, CLCP and SALT can be applied to design and implement technological solutions that are not only technically innovative but also culturally sensitive and socially sustainable. These processes ensure that technological advancements align with the community's actual needs and capacities, promoting ownership and long-term success. This workshop shows that by integrating CLCP and SALT, technology initiatives can benefit from a participatory approach that values local knowledge and fosters collaboration and continuous improvement.

Lecturer: Nabaraj Adhikari

Junior Researcher, Department of Social Sciences LUT University

CLCP Facilitator and Former Board Committee Member, The Constellation, Belgium

Nabaraj Adhikari is a social scientist specializing in social welfare, health policy, and sexual and reproductive health and rights (SRHR). He is currently serving as a Junior Researcher and pursuing doctoral studies on Social Sustainability and Welfare policy at LUT University Finland, where he is involved in a research project to explore work and retirement perceptions across Europe. He is a facilitator of a strength-based approach known as "Community Life Competence." they use the SALT (stimulate, appreciate, learn, and transfer) approach to bring communities together and encourage them to take ownership.

Structuring and Sensor Manufacturing with Microtechnology

Date: Tuesday, July 2nd
Time: 13:30-15:30

Room: Lappeenranta (SEMINARRAUM AE U1 - 6)

The workshop provides an interactive introduction to the main principles of microtechnology; a key component of the ever-growing semiconductor and chip industry. Students will be presented with the fundamental techniques of lithography and deposition technologies, the basics of magnetic sensors using the anisotropic magnetoresistive effect (AMR) and how to electrically connect for data read-out, while also actively manufacturing and evaluating their own sample sensor chip.

Lecturer: Maren Prediger

Background:
Biochemistry, Toxicology, Micro Technology

Education:
12/2014 B. Sc. Chemistry (summa cum laude) from C. Eugene Bennett Department of Chemistry, West Virginia University, USA
08/2017 M. Sc. Analytical Chemistry (magna cum laude) from C. Eugene Bennett Department of Chemistry, West Virginia University, USA
12/2017 Enrolled as Doctoral Student at Institute of Micro Production Technology, Leibniz University Hannover

Work Experience:
01/2015 - 08/2017 Graduate Research and Teaching Assistant at C. Eugene Bennett Department of Chemistry, West Virginia University, USA
12/2017 - today Research Associate at Institute of Micro Production Technology, Leibniz University Hannover
05/2024 - today Scientific Coordination at CRC SIIRI Integrated Research and Training Group (Subproject Z02)
04/2021 - 03/2023 Head of Research Group Magnetic and Biomedical Applications
04/2023 - 04/2024 Head of Research Group Biomedical Technologies

Kallipos Open Academic Textbooks and an open-source Typesetting Suite

Date: Tuesday, July 2nd
Time: 13:30-15:30

Room: L' Aquila (SEMINARRAUM AEEG - 1)

The Kallipos initiative aims at developing electronic textbooks (mainly, but not only, for students and Professors of Greek Universities) and making them freely available with open licenses through the Kallipos digital Repository. The publishing of over 900 academic e-books has been made possible through this initiative. It has also set the ground for researching alternative typesetting and authoring methods. The Kallipos Docbook Document Suite provides a solution for producing easily revisable, versatile documents with multiple output formats, such as custom-style PDFs and HTML pages, from one simple base format; XML files using the Docbook schema.

We live in an age where computers have a substantial presence in our every-day lives and work. Historically, producing and keeping documents has been one of the first usages of modern computers. It is also a use case that attracted a large number of users with less technical computer knowledge. For this reason an authoring tool such as the one developed with Kallipos, has to be designed in a way that caters to both novice and advanced users. We believe that this software suite provides a good meeting point between complexity and usability. On the one hand, more advanced users, can use it as a basis for their own customizations. On the other hand, we have made an effort to provide novice users with the tools and documentation to not only produce beautiful output formats for their documents, but also achieve a better understanding of the tools that they use to produce documents.

Lecturer: Fotis Branikas

My name is Fotis Branikas and I am currently in the last year of my studies for an integrated MEng degree at the school of Electrical and Computer Engineering of the National Technical University of Athens. Recently, I finished my diploma thesis with the title: "Performance Analysis and Modeling of Parallel Applications in Distributed Memory Architectures". For the last couple of years, I have worked at NTUA's Kallipos, the Initiative of Open Academic Textbooks. My participation in this project has given me an opportunity to develop an authoring tool software suite with the use of open source software. This is the main project I am going to present in the conference. My main professional passions are software engineering, high performance computing and computational modeling. I have also completed my internship at Tesla's Motor R&D department as a software engineer.

The application of Large Language Models for supporting learning and clinical decision making in emergency setting

Date: Tuesday, July 2nd
Time: 13:30-15:30

Room: Kigali (SEMINARRAUM DB Gelb 05 B)

Technology-enhanced learning (TEL) refers to the use of digital tools and resources to improve and facilitate the educational process. This can include various technologies, such as online learning platforms, multimedia content, interactive simulations, educational software, and communication tools that support teaching and learning.

In such a broad context, the teaching program will focus on the illustration of AI pipelines and their application in the context of clinical medicine as well as on the description of current projects. In particular, aims to develop an app to support learning and decision-making of resident students in emergency departments, exploiting a “Flash cards”-based approach. Currently, the app has been designed and developed for both Android and iOS, and we are testing the use of generative AI to create the same content that we manually developed. The main objectives are:

(i) to test the ability of generative AI to reduce the development of the app content without lowering its quality and accuracy,
(ii) to measure the user experience in the real setting,
(iii) to evaluate the opinions of the resident students in terms of both supporting learning and their professional activities.

The project is in its early stages, and the current results show a good promising ability of the generative AI— after a thorough prompt engineering and evaluation activity—to support the content development. Overall, the present project will highlight the relevance of AI-based tools in supporting the improvement of skills as well as the clinical decision-making.

Lecturer: Clara Balsano

Prof. Clara Balsano, Full Professor of Internal Medicine, Chair of the School of Emergency and Urgency Medicine, Department of Clinical Medicine, Life, Health & Environmental Sciences-MESVA, University of L'Aquila.

Designing the EULiST student digital infrastructure

Date: Tuesday, July 2nd
Time: 13:30-15:30

Room: Vienna (SEMINARRAUM AA02 - 1)

Within this workshop EUliST students will jointly discuss with a task member of the digital campus team the future digital campus of EUliST. After a short individual survey, we will create discussion tables where we exchange ideas and thoughts on various topics concerning the EUliST digital campus, such as tops and flops of campus software, student communication in the digital campus, streamlining key steps within the offerings of the EUliST digital campus, discussing Moodle's potential as the central EUliST e-learning tool etc. We are looking forward to your ideas and collaboration!

Lecturer: Gergely Rakozci

Dr. Gergely Rakoczi is an e-learning specialist at the TU Wien. As a trained media computer scientist his main interests include digital teaching and learning, e-learning design, Moodle, teaching with new media, virtual reality and all kinds of web-based and digital educational technologies - both for higher education and for the private sector. His research focuses on multimedia learning, technology-enhanced teaching, eye tracking analysis and the design of user interfaces that promote learning. He is currently head of the "Digital Teaching and Learning" service unit at TU Wien.

Technostress and TechnoIntrusion: Building Responsible Digital Natives

Date: Wednesday, July 3rd
Time: 13:30-15:30

Room: Brno (SEMINARRAUM AE U1 - 2)

In this workshop you will understand the phenomenon of technostress and technoinstrusion. As responsible digital natives you will share and creatively develop in small groups tips and tricks to better cope with technostressors and share the same with fellow participants in the group.

Lecturer: Anuragini Shirish

Anuragini Shirish is a Professor at Institute Mines-Télécom Business School, France. She has also completed her habilitation à diriger des recherches (HDR) from Université de Strasbourg, France. Her research focuses on studying the humanistic and instrumental impacts of several socio-technical phenomena in the broad areas of digital work, digital innovation and digital society. Her research has been published in international refereed journals including the Journal of Management Information Systems (JMIS), European Journal of Information Systems (EJIS), Information Systems Journal (ISJ), Communications of the Association of the Information Systems (CAIS) and International Journal of Information and Management (IJIM), among others. She has also presented her work in several premier IS and management conferences including the International Conference on Information Systems (ICIS), the Academy of Management (AOM), Pacific Asia Conference on Information Systems (PACIS), and the Americas Conference on Information Systems (AMCIS), among others. She was ranked as 6th in the worldwide straight count rankings for publishing in top six information systems journal, published by Association for Information Systems (AIS) for the period of 2021-2023. She serves as an Associate Editor at European Journal of Information Systems (EJIS). She has been honoured with several awards including the "Outstanding Educator Award" by the AIS women's network. She is recognised as AIS distinguished member cum laude.

Synergetic Factory planning: Interlocking process and object planning based on a practical example

Date: Wednesday, July 3rd
Time: 13:30-15:30

Room: Bratislava (SEMINARRAUM AE U1 - 3)

Factory planning processes are characterized by numerous challenges. These challenges include the consideration of a wide range of influencing factors, based on internal or external change drivers that affect companies. In order to make the long-term investment in a factory cost-effective, future-proof factories must therefore be planned flexibly and adaptably. One approach to solving these challenges is the Synergetic Factory Planning process model, which combines production and object planning with project management. Synergetic factory planning is a sensible way of parallelizing the planning of the various specialist disciplines for a factory at an early stage and using mutual synergies. The interlinking of the disciplines and thus the high quality of the planning results achieved with the help of the process model will be demonstrated in a practical example.

Lecturer: Tanya Jahangirkhani

Tanya Jahangirkhani, M. Sc. (*1995) studied industrial engineering with a focus on mechanical engineering at the Technical University of Darmstadt, the Politecnico di Torino and the Technical University of Central Hesse. Since 2022, she has been working at the Institute of Factory Systems and Logistics (IFA) at Leibniz Universität Hannover as a research assistant in the Factory Planning department. In research and industry projects, Ms. Jahangirkhani deals with the integration of agile quality management systems in the factory planning process as well as holistic factory and quality planning.

Obstacles of Exchange and finding the perfect exchange spot

Date: Wednesday, July 3rd
Time: 13:30-15:30

Room: Lappeenranta (SEMINARRAUM AE U1 - 6)

The workshop will compromise two parts. The first will be around finding out students at your university don't go abroad? Traditionally STEM-students are quite reluctant to go abroad, it would be nice to know why and find solutions. The second part will revolve around finding out what makes our cities worth visiting both for exchange and holidays. This way you get a comparatively easy opportunity to train your presentation and persuasion skills, all while having only a short time to prepare.

Lecturer: Gregor Fischer

Hey, I'm Gregor Fischer, the most important thing you have to know about me regarding this workshop is that I'm involved in student exchange for my whole student life. It started with being a buddy to exchange student while studying abroad myself. Afterwards I was a member of ESN Buddynetwork at TU Wien. In the past three years I have been working in this field both as an employee as well as a representative for the student union. My drive is to bring students together and therefore I want to know what hinders students from exchanges and how can we attract more students to do exchanges.

Use of robotic exoskeletons and augmented reality to counteract sarcopenia in elderly patients

Date: Wednesday, July 3rd
Time: 13:30-15:30

Room: L' Aquila (SEMINARRAUM AEEG - 1)

In 2050, 1.5 billion of individuals will be elderly (16% of the population worldwide, 24% of Italian population). Elderly people are likely to suffer from complex chronic diseases dramatically affecting their health and quality of life, with an important impact on public health system. This scenario can be even worse considering the occurrence of sarcopenia in such patients, an invalidating condition that causes further deterioration of disease, adverse clinical outcomes, thus leading to a poor prognosis.

Based on such considerations, we sought to test the combination of robotic exoskeletons specifically designed for clinical purposes together with viewers based on augmented reality, as tools for slowing or recovering sarcopenia in hospitalized older patients with complex chronic diseases.

To this purpose, we will enroll a population of 300 elderly individuals. At the admission and discharge of patients, sarcopenia will be evaluated through appropriate instrumental analyses and tests (such as CT, ultrasonography, strength tests) and

specific biomarkers will be evaluated on related biological samples (whole blood, saliva and plasma or serum).

AI-based approaches will be used to assess the posture of each single elderly patient and the condition of his locomotor system with the aim of offering a personalized treatment. Afterwards, we will provide these patients of the chosen robotic exoskeletons and ask them to perform passive or active assisted training exercises depending on the individual situation. Before and after rehabilitation treatment the above-mentioned tests will be performed together with the assessment of biomarkers in order to evaluate the effectiveness of the treatment. Concerning the molecular biomarkers to be employed, we conducted a pilot study on 12 patients in order to explore circulating proteome profiles possibly associated with sarcopenia/advanced sarcopenia. To this purpose, we obtained patients' serum and tested on Somascan 7k system (Somalogic), that allowed the quantification of 7288 protein levels. In particular, six control individuals were compared to sarcopenic patients affected by complex chronic diseases (cirrhosis, heart failure, renal failure) to obtain the differentially expressed proteins. After having performed raw data normalization and analysis, we obtained 49 and 50 downregulated and upregulated proteins (FC=±1, $p < 0.05$), respectively. The bioinformatic analysis allowed to find that such differentially expressed proteins are involved in signaling pathways of potential interest (such as immune/inflammatory mechanisms, response to stress, regulation of protein metabolism, cell adhesion). Such data will be validated and integrated with clinical and instrumental data in order to test their utility as accessible markers for the above-mentioned treatment.

Overall, we propose to test the effectiveness of an "embedded system" in the rehabilitation of locomotor apparatus of hospitalized elderly patients, combining robotic exoskeletons and mixed reality with the aim of counteracting the side effects related to sarcopenia in complex chronic diseases, improving not only the prognosis but simultaneously reducing the hospitalization time, and consequently the economic impact on public health system.

Lecturer: Valerio Caputo

Dr. Valerio Caputo, Researcher of Internal Medicine, Department of Clinical Medicine, Life, Health & Environmental Sciences - MESVA, University of L'Aquila.

Current trends in the development of structural alloys

Date: Wednesday, July 3rd **Room: Paris (HÖRSAAL AE U1 – 1 - CEE)**
Time: 13:30-15:30

The workshop will focus on materials, in particular, alloys for structural applications. It will range from known to emerging new alloy concepts that are currently of interest to research groups around the world. It will briefly touch on well-known alloys such as Duralumin, TRIP-steels but also new alloy concepts such as Cantor alloy.

The aim of the workshop is to convince participants that in order to unlock a full potential of known as well as emerging alloys, we have to look at them from several points of view. Therefore, together we will examine nano, micro, mezzo and macro scale structure of alloys.

Is it possible to further improve conventional alloys? This question is already answered by reductionist and constructionist approach, which will be illustrated by the known alloys discovered by each group of scientists.

Of course, none of these discoveries would be possible without experimental observations and theoretical predictions. A few examples of experimental techniques will be briefly mentioned, covering, for example, more than 400 years of microscope development starting with the Leeuwenhoek late 17th century single-lens microscope. Recent progress and high pace of discoveries will be highlighted with computational materials science approach.

Lecturer: Martin Kusy

At the Slovak University of Technology, Martin Kusý is a fellow of the Institute of Materials. He is a member of the scientific board of the Faculty of Materials Science and Technology and the Institute of Materials and Machine Mechanics of the Slovak Academy of Sciences. He was a deputy director of the Institute of Materials in the period from 2009 to 2013. Martin Kusý is a president of the Society for New Materials and Technologies. He received his master's and PhD. degree at the Slovak University of Technology. During his career he held visiting research positions at the Universita degli studi di Torino and Leibniz Institute for Solid State and Materials Research Dresden (IFW).

His research interests are self-sacrificial Zn based alloys for protection of steels against corrosion, solidification and microstructure evolution during solidification, x-ray diffraction analysis, particularly, microstructure determination using diffraction.

Keynote Speeches

European Parliament Speech

Date: Wednesday, July 3rd
Time: 16:30-18:00

Room: Paris (HÖRSAAL AE U1 – 1 - CEE)

Mr Frank PIPLAT

Head of European Parliament Liaison Office in Austria

Peter Lorenz's Lecture

Date: Thursday, July 4th
Time: 16:30-18:00

Lorenzateliers was founded in Innsbruck in 1980 and has been based in Vienna since 1990. Of more than 500 works, almost a third have been realised in Austria,
Germany, Italy and Slovenia: urban planning, architecture, interior design.

The best-known projects include:

- The "Bora projects in Raubling, Niederndorf and Herford"
- The "Medical University in Linz"
- "School on the Vienna market"
- the "Factory for Young People" in Trieste
- the "Sportcity Ilirija" in Ljubljana
- as well as several subsidised housing developments in Vienna, such as the "Nussbaumallee".

Peter Lorenz's professional profile includes constant travelling, teaching and lecturing as well as passionate criticism and a willingness to discuss the phenomena of nature, the city, architecture, beauty and their interrelationships. Lorenz is also a frequent juror on design advisory boards and architectural competitions.

Social Activities

We have many social events and activities planned. These events have been organized in collaboration with HTU, the TUW students' union.

Get2Know

The goal is to meet your fellow participants.

International Evening

This is your time to shine and showcase typical beverages or snacks or an item you feel represents your country of choice. Therefore, if possible, bring something from your home country and/or the country of your university.

City Rallye and Pub crawl

You have spent now three days in the beautiful city of Vienna. Now it’s time to see some of its highlights. For that you will form teams completing challenges while learning some interesting facts about your surroundings. Afterwards, if you like, the challenge continues in Vienna’s bar district. You goal is to visit as many bars as possible and complete activities or maybe you find just the place for your team and spend the rest of the evening there?

Goodbye party

Yesterday you experienced Vienna and its magnificent historical layout. Tonight, you have the opportunity to join one of TU Wien’s iconic student events. The civil and environmental engineers together with the spatial planners are having their semester closing event right on campus. Enjoy cool drinks and DJs while getting a chance to dive in TU Wien’s famous student life. FYI: The event lasts until 10 or 11 pm (confirmation pending).

Students Presentations

Students are at the heart of this event. As such, some sessions will be composed of presentations, either pitches or posters, from participants.

EULiST Fair

The EULiST Fair is an event where you can roam around the room and discover the projects of your fellow students. You can engage in one-to-one discussion with the presenters, who will be more than happy to present you their works.

Pitches

The pitch session is a great opportunity for you to attend vibrant presentations from your fellow students. There will be 6 parallel pitch sessions. Each room has its own theme and will welcome the pitch of 7 students throughout 2 hours. The first 15 minutes will be an introduction conducted in the Paris room. You are free to change room at any time, regarding the presentations you want to see. You will find in this document the details for each pitch: the speaker's profile, the pitch's topic, and a short abstract. Here are the themes for each room:

Medical and chemical innovation	Technology, from Robots to AI	Let's delve into Physics	Green technologies	The power of Business and Socioeconomics	An impact on society
Bratislava	Paris	Lappeenranta	Hannover	Brno	Jönköping

Medical and chemical innovation – Bratislava Room

Maria Pantazidou - Undergraduate student at NTUA (Greece)

Solvolysis of Thermoset Polymer Matrix Composites

The present study focuses on the chemical recycling through solvolysis of Carbon fiber (CF) and Glass fiber (GF) reinforced composites (CFRPs/ GFRPs), such as End-Of-Life

wind turbine blades (WTB), at both lab and pilot scales. The matrix of CFRPs that is used is epoxy resin and the matrix of the GFRPs is polyester according to literature and FT-IR analysis. The developed solvolysis processes aim to recover the fibers. Different solvolysis processes are examined, with an example being the glycolysis of WTB samples with Polyethylene glycol (PEG and specifically PEG200) as solvolysis agent, in the presence of NaOH, at 200oC and ambient pressure. Each process has been optimized at lab scale regarding temperature, catalyst, and solvolysis agent quantity, time, etc., and then upscaled to pilot. The surface morphology of the recovered fibers is observed through SEM analysis. In the case of the PEG200/NaOH system, the optimal conditions are 200 g PEG200, 12.5 g NaOH, 10 g WTB, for 6 h at 200oC, with a decomposition efficiency of 83%.

Tamara Pócsová - PhD student at STU (Slovakia)

Is real science behind TV shows?

What is the real work of an analytical chemist? My research group focuses on analysis of environmental and forensic samples. We are looking for pesticides in food, fruits, vegetables, bees and bee products. Furthermore, pharmaceuticals and explosives in water and soil samples. For identification of the relevant substances, we are using gas and liquid chromatography coupled with different detectors like electron capture detector, mass spectrometry or tandem mass spectrometry.

Alessandra Falone - Undergraduate student at UNIVAQ (Italy)

Cu and Ni recover from galvanic wastewater

During my bachelor's degree, I studied hydrometallurgical processes in order to recover Ni and Cu from galvanic wastewater. This is a way to talk about new technologies that lead to a circular economy.

Francesco De Arcangelis - Undergraduate student at UNIVAQ (Italy)

Additive manufacturing in biomedical engineering

Additive manufacturing is a new technological process that allows the creation of objects with complex geometry. Several engineering fields will be deeply changed due to the possibility of developing structures that cannot be produced until now. For sure, biomedical engineering and particularly the creation of orthopedic prostheses for rehabilitation would see in the next years an incredible improvement thanks to this kind of process.

Elias Nino Horn – Master student at TUW (Austria)

Critical indicators for innovative circular processes in the chemical industry

Brief overview of critical indicators in the circular economy for chemical processes. Background, methodology, initial results, expected results and further questions.

Leonard Galustian - Master student at TUW (Austria)

fMRI Analysis of Ketamine Effects on the Human Brain

In my master's thesis, in cooperation with the Medical University of Vienna, I investigated the effects of ketamine (vs. placebo) on the human brain using statistical modeling of fMRI scan data of healthy subjects.

Meiqi Liu - PhD student at TUW (Austria)

Monitoring and Modelling of "forever chemicals" - PFAS at upper Danube catchment

PFAS (Per- and polyfluoroalkyl substances) is a group of "forever chemicals" widely used in our daily society life. How well aware are you of the problem with these pollutants? In this presentation I will show you more and give you some tips on what we can do.

Technology, from Robots to AI – Paris room

Alexandre CHALIN - Undergraduate student at IMT (France)

Blue Smart Robotics

Soar high, think light, an intelligent Robotic Solutions for Gliders.

Christina-Maria Androna - PhD student at NTUA (Greece)

The SustainGraph: A knowledge graph for tracking the progress of the Sustainable Development Goals

The SustainGraph is a knowledge graph centered around the Sustainable Development Goals (SDGs), that aims to track the progress towards their achievement at national, regional and local levels. It acts as a unified source of knowledge around information related to the SDGs by hosting and semantically aligning data of various types (e.g., time series indicators, policy documents) from diverse sources. Their representation in a graph through well-defined entities and relationships enables comprehensive analyses and the identification of hidden relationships considering both the temporal and spatial scale.

Mohammad Mahdi Baghaei Saryazdi - Master student at LUH (Germany)

UrbanSync

Citizens can report urban issues, propose solutions, and track their impact, earning rewards for their contributions and sustainable transport choices. Real-time air quality monitoring and personalized health recommendations make eco-friendly activities more enjoyable. VR/AR tools enable citizens to visualize and influence urban planning, ensuring developments meet community needs. A blockchain-based system increases transparency, tracking project progress and managing funds to build trust and reduce corruption. Start locally in Hannover, scale regionally, and aim for state-wide deployment to revolutionize urban planning and sustainability.

Javier Ruiz Ramos - Undergraduate student at URJC (Spain)

Open source autonomous UAS project

An autonomous UAS that utilizes open-source technologies, designed to democratize access to high-quality aerial technology. Our platform provides a robust, flexible, and fully customizable framework that anyone can use, modify, and improve. By leveraging

the power of open source, we aim to create an ecosystem that addresses a wide range of applications.

Muhammad Azeem Khan - PhD student at UNIVAQ (Italy)

VITAL-FL (Value of Information and Timing-Aware Scheduling for Federated Learning)

Data possesses significant value as it fuels advancements in AI. However, protecting the privacy of the data generated by end-user devices has become crucial. Federated Learning (FL) offers a solution by preserving data privacy during training. FL brings the model directly to User Equipments (UEs) for local training by an access point (AP). The AP periodically aggregates trained parameters from UEs, enhancing the model and sending it back to them. However, due to communication constraints, only a subset of UEs can update parameters during each global aggregation. Consequently, developing innovative scheduling algorithms is vital to enable complete FL implementation and enhance FL convergence. In this paper, we present a scheduling policy combining Age of Update (AoU) concepts and data Shapley metrics. This policy considers the freshness and value of received parameter updates from individual data sources and real-time channel conditions to enhance FL's operational efficiency. The proposed algorithm is simple, and its effectiveness is demonstrated through simulations.

A.M. Meshkatur Rahman - Undergraduate student at LUT (Finland)

Electric Small Aircrafts

Developing trainer aeroplanes that run on electricity.

Lukas Wurth - Master student at TUW (Austria)

Design of a Traction Control System for Co-Simulation in a Digital Twin Platform

A multi-body simulation (MBS) model of a virtual rail vehicle was successfully co-simulated with a PID-based control model using the FMI standard to control the anti-slip behavior and the speed of the rail vehicle.

Sohaibullah Zarghoon - Master student at STU (Slovakia)

Software Support for Optimization of Continuous Casting Process

Let's delve into Physics – Lappeenranta room

Ioannis Chondromatidis - Undergraduate student at NTUA (Greece)

An Innovative Flap-Based Car Side Mirror Design for Noise Reduction & the Assessment of an Active Aerodynamic Approach for Drag Mitigation

This project presents a novel approach to mitigate sound emissions from car side mirrors through the implementation of an innovative flap-based design. The study commences with a comprehensive review of existing literature, exploring advancements in addressing sound generation from car mirrors and the associated health concerns, including mental fatigue caused by continuous noise exposure. Additionally, the paper delves into the impact of drag on cars, emphasizing the need for aerodynamic solutions. Furthermore, the computational fluid dynamics (CFD) model, incorporating Reynolds-averaged Navier-Stokes (RANS) and the Proudman acoustic analogy, is described for simulating and analyzing the proposed designs. The subsequent sections detail various flap-based designs developed to effectively reduce sound emissions, with a focus on key configurations that exhibited significant improvements. Furthermore, the paper introduces an exploration of active aerodynamic concepts, offering design considerations that allow drivers to selectively reduce drag without compromising sound reduction. Material selection and finite element analysis (FEA) are discussed, highlighting the feasibility of constructing the flaps using 3D printing technology. The incorporation of such materials aligns with both practicality and efficiency in the proposed innovative design. In conclusion, the findings underscore the efficacy of the flap-based design in diminishing sound emissions from car side mirrors. The consideration of an active aerodynamic device adds a versatile dimension, allowing drivers to balance sound reduction and drag based on their preferences.

Dimitra Zontirou - Undergraduate student at NTUA (Greece)

Depleted Uranium (DU): Applications and environmental effects.

An introduction to depleted uranium (DU) related to its origin and features. Emphasis will be given on the applications of depleted uranium in both everyday and specialized fields, as well as an overview of the environmental impacts of its utilization. Finally, the remediation technologies from the DU's contamination will be discussed.

Ondřej Lokos Master student at BUT (Czech Republic)

Diagnosis of connected concrete layers by pulse echo method

This study deals with the measurement of the adhesion of the upper concrete layer to the underlying layer in a truck parking lot. The pulse echo method is used to detect delaminations of whitetopping. The aim of the work is to verify the efficiency of this method and its accuracy in measuring the adhesion of the concrete layer.

Anna Glozigová - PhD student at BUT (Czech Republic)

Possibilities of using magnetically active liquids in micro or millifluidics

Nowadays, miniaturization and nanotechnology are a relentless trend that is far from reaching its peak. Smart materials, in general, are widely used in modern technology. Magnetically active liquids are innovative solutions with a wide range of applications, not only in the field of microfluidics. Their specific properties can be used to precisely control and manipulate liquids at the microscopic level. In contrast to their well-established applications in biology, chemistry, and medicine, the use of magnetically active liquids in hydrodynamic components is still a relatively unexplored area with considerable potential for innovation and industrial improvement.

Alessio Sciamanna – Master student at UNIVAQ (Italy)

Application of Computational Fluid Dynamics methods in order to study an aortic aneurysm.

My project is about computational fluid dynamics. It shows how an abdominal aortic aneurysm can be detected and studied through CFD methods. Analyzing blood pressure and blood flow it's possible to recognize symptoms caused by this pathology.

Florian Brandstätter - Undergraduate student at TUW (Austria)

Levitated nanoparticles as super precision sensors

We levitate SiO2 nanoparticles in intensely focus 1550nm laser light. Under these conditions the particle is very well isolated from its surroundings. At the same time the information about the tiny movements of the particle is encoded in the scattered light and can be used to use this nanoparticle as a very precise probe. All kinds of different experiments can be conducted with those basics. In our case, we spin the levitated particle with an additional (circularly polarized) laser beam and use its liberation to measure the damping rate of the residual gas in UHV conditions or use it as a gyroscope.

Elisabeth-Sena Welker – Master student at TUW (Austria)

Carbon Nanotube Electron Gun for Low-Energy Cooling at CERN's ELENA Decelerator

This master thesis project aims to develop, optimize, and characterize an electron gun based on Carbon Nanotube (CNT) Electron Field Emission (FE). Compared to traditional thermionic sources, the unique geometric properties of CNTs offer significant advantages, including strong field enhancement, low energy spread, and high emitted currents. These characteristics make CNT-based electron guns an exciting option for use in Electron Coolers at the Extra Low Energy Antiproton (ELENA) ring.

Abdul Rehman – PhD student at UNIVAQ (Italy)

General Introduction on my Previous Activities

Green technologies – Hannover room

Stavros Vigkos - Undergraduate student at NTUA (Greece)

Solar Photovoltaic Energy Production Conditions in the Urban Environment of Vienna

Effects of clouds-aerosols on PV energy in Vienna & rooftop PV energy adequacy planning scheme.

Ahmed Hossam Ahmed Maarouf – Master student at LUH (Germany)

Rice husk

Eco-friendly cement to replace classic cement

Vivien Dos Anjos – Master student at LUH (Germany)

Corporation in the Development of World-Saving Technologies: A Case Study on Cultured Meat

The development of cultured meat represents a significant advancement in world-improving technologies, aiming to address critical issues such as food security, environmental sustainability, and animal welfare. This study explores the collaboration among diverse stakeholders, including scientists, industry leaders, policymakers, and consumers, in the development and commercialization of cultured meat.

Mária Bláhová - PhD student at STU (Slovakia)

Alternative Leather: Utilizing Fungi and Sheep Wool to Promote a Circular Economy

The project for alternative leather made from fungi and sheep wool addresses the lack of eco-friendly substitutes for animal leather on the market, while also tackling the issue of waste sheep wool, which would otherwise end up as biological waste. This project combines the benefits of natural materials and innovative technologies, contributing to the development of a circular economy.

Tatiana Holkovičová - PhD student at STU (Slovakia)

Lupin powder as a valuable source of proteins for bakery products

In recent years, there has been growing interest in lupin as a novel ingredient in cereal-based products due to its high nutritional value. Lupin offers a significant source of gluten-free proteins, dietary fiber, vitamins, and antioxidants, making it an attractive option for enhancing the nutritional profile of baked goods. Moreover, the complementary amino acid profiles of lupin and cereal proteins create a balanced nutritional profile, addressing common deficiencies found in individual protein sources. This study evaluates the potential of lupin powder as a source of high-protein and high-fiber raw material for bakery products, specifically focusing on its application in baked rolls. The aim of this work is to investigate the thermo-mechanical properties of wheat flour blends with various proportions of lupin powder (0-25% substitution) using a Mixolab device. The research further focuses on the proximate composition, qualitative properties, and sensory characteristics of prepared baked rolls. It was found that lupin powder addition significantly modified the rheological behavior of wheat dough (increased water absorption, decreased dough stability, and reduced C2, C3, C4 and C5 values) and qualitative properties of rolls (reduced loaf volume and cambering). Moreover, sensory evaluation highlighted that no significant differences ($p < 0.05$) were found among rolls produced from flour blends containing up to 15% lupin and control sample (wheat rolls) in terms of taste, texture, and overall acceptability. The results demonstrated that baked rolls prepared from flour blends containing more than 10 % of lupin can be considered, according to EC Regulation No 1924/2006, as a foodstuff high in fiber and protein (products contained at least 6 g of fiber per 100 g and at least 20 % of the energy value of the rolls was provided by proteins). These findings support the potential of lupin as a valuable ingredient in the bakery industry, contributing to the development of innovative, nutrient-rich baked goods.

Satyam Tiwari – Master student at BUT (Czech Republic)

Feasibility study of Solar Panel use for high altitude UAV

This study explores the feasibility of using solar panels to power high altitude UAVs, focusing on their practicality in harnessing sunlight for flight.

Vasilis Loukadakis – PhD student at NTUA (Greece)

Digital & Green Transition: a challenge for EU

Due to climate change, there have been significant efforts to develop new, "greener", technologies and adapt our existing solutions to account for these issues. At the same time, the development of Artificial Intelligence and other digital technologies invite us to re-imagine our daily activities, including work. What do these changes entail for the EU's future and self-sustainability? Join a discussion about Europe's Green Deal, the Critical

Raw Materials Act and more and learn more about how we adapt to ensure a more resilient, resource-conscious tomorrow.

Philipp Rachle – Undergraduate student at TUW (Austria)

The importance of hydrogen for the European energy transition

The power of Business and Socioeconomics – Brno room

Georgia TRITSINI - Undergraduate student at NTUA (Greece)

Green Open Spaces and Coastal Gentrification: The case of the Athenian and French Riviera

A study on the effects of the growing hospitality industry in green open spaces around coastal regions and the architect's response to the social phenomenon of gentrification on local population in Côte d'Azur (France) and Vouliagmeni (Greece).

Magdalini Mylona - Undergraduate student at NTUA (Greece)

MiMEC a volunteering journey: From students to trainers

Have you ever been expected to know something that no one explicitly taught you? Are there essential skills that are not yet addressed in traditional education? It is common for both students and new graduates to experience this gap when it comes to soft skills. The high demand for soft skills in the workplace is well documented by multiple organizations. How can a volunteering group become the solution to this gap? Through a series of virtual and in-person events, MiMEC empowers participants to develop critical skills necessary for the challenges of tomorrow. Seminars, workshops, and other initiatives enable students to develop communication, leadership, and problem-solving skills among others. With more than 680 applications and collaborations with industrial and academic partners, MiMEC is proof that volunteering groups can bridge the skills gap and make a difference in their communities.

Ella byullee Kim – Master student at LUH (Germany)

Uncover the Hidden Costs: Korea's Birth Crisis and Europe's Tech Struggles Exposed

World-record low birth rate hits South Korea in relation to low women's rights and terrible social environment. Meanwhile, Europe is struggling a lot on innovation and economy while slowly facing low birth rate as well. This presentation explores the shocking truth behind it.

Sana Nasser Fauz Nasser – Master student at LUH (Germany)

Sustainable Couture

Renting bridal and party wear clothes instead of buying them to opt for a sustainable and affordable outfit for events.

Evelina Blomqvist - Undergraduate student at JU (Sweden)

Mind the gap - Automation skills gap

Final thesis work: An exploratory case study of the growing automation skills gap. An analysis of the current situation for manufacturing companies and the future challenges they face with automation application and the lack of required skills for implementation and operations.

William Acres - Undergraduate student at TUW (Austria)

OMV's strategies and technologies for innovation and sustainability

How OMV is transforming its business from a linear to a circular economy. Main topics are sustainability, alternative energy and chemical recycling.

Kateryna Kryzhanivska - PhD student at LUT (Finland)

ISPIM - Research Impact Mentoring Programme

ISPIM (International Society for Professional Innovation Management) is excited to pilot the first edition of the Research Impact Mentoring Programme in autumn 2024, aimed at PhD students and early-career researchers. It provides an opportunity for emerging scholars to gain valuable insights into creating impact from research, receive guidance from experienced mentors, and connect with a network of professionals in innovation management. The programme is designed to help researchers refine their research impact strategies and receive community support in navigating challenges and translating academic work into real-world outcomes.

Lari Vanhala – Master student at LUT (Finland)

Students in decision making

How students could be better considered when it comes to decision making in universities, local politics, and many more.

An impact on society - Jönköping room

Hamza El Arji – Master student at IMT (France)

BreatheWell

At BreatheWell, we're on a mission to revolutionize the way individuals with exercise-induced asthma receive support and assistance. Understanding the challenges faced by those with asthma during physical activities, we've dedicated ourselves to creating an innovative app that offers personalized guidance and support.

Martin Schmitt *and* Rebecca Attali - Undergraduate students at IMT (France)

OMA-Fostering european cultural exchange through collaborative music projects

OMA is an orchestra that aims to create links between students, professors and staff members. Opening the school to the city of Alès is also one of our top priorities. The Orchestra des Mines d'Alès aims to unite students across Europe through collaborative music events. By organizing annual performances with musicians and dancers from various universities, we will foster intercultural dialogue, mutual enrichment, and lasting connections, enhancing both educational and personal growth.

Youenn Le Gal - Master student at IMT (France)

BNEI - The French Student Representation of Engineering Student

How the Engineering Student are represented in France

Alexandros Koronakis – Master student at NTUA (Greece)

HBIM development of Palazzo Ducale di Gubbio (Italy) & Qala't Bu Mahir Fort (Bahrain)

The project aims to present the heritage documentation progress of the Renaissance Palace Ducal of Gubbio in Italy and Bu-Maher Fort in Bahrain. The Scan to BIM process, which involves capturing data through 3D surveying technologies (UAV, TLS, MMS) and transforming them into detailed geometric parametric 3D models for use in BIM software like Revit, is regarded as a critical tool for preserving historical data and generating Building Information Models.

Miran Ghafoori – Master student at TUW (Austria)

From Prototyping to Planet Building on Momentum to Fight Microplastic Pollution Globally with Advanced Tech & Global Teams

Microplastics pollute our planet. At Clean Waters (www.clean-waters.co) We've developed game-changing solutions using advanced tech, but to truly make an impact, we need global collaboration. Join us as we turn student innovations into a world-changing force!

Volodymyr Tretyak – Master student at TUW (Austria)

Augmented Reality, historical sites reconstruction

The project is about 3D reconstruction of historical building located in Austria.

Christos Kalantzis - PhD student at NTUA (Greece)

A Case Study in Greece: Remote Sensing our way towards the protection of Hymettus Mountain

Cartography is a leading existential reaction of man to his inability to have a wider supervision of the Geospace. The presented project utilizes remote sensing and GIS methods to create civil protection and environmental protection Maps of Hymettus Mountain, in Attica, Greece. These maps will be used by an official volunteering organization recognized by the United Nations for its environmental activity.

Aitana Velasco – Undergraduate student at URJC (Spain)

Students house

The Students House and all the projects organized by it.