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Newsletter

Invited Lecture on Digital Twins in 6G Networks Automation

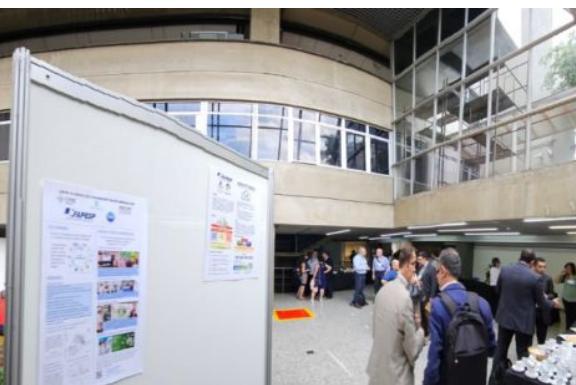


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Klaus Raizer, Ericsson researcher in the AI area and former FEEC student, ministered a guest lecture on “Digital Twins and 6G network automation” on Thursday, December 7, 2023, as part of the seminar series grad class at FEEC-UNICAMP led by Prof. Christian Rothenberg.

Raizer has shown the importance of Ericsson’s innovation ability to produce Research and Development worldwide, including in Brazil, influencing multiple areas of Engineering, especially networks. The researcher has emphasized the importance of Cyber-Physical Interaction for 6G. Digital Twins is, therefore, being regarded as an essential area in the Telecom area for controlling the automation and digital representation of a system or virtual network capable of generating a mirror image capable of synchronizing a target image.

Participation in FAPESP-NSF Center-to-Center Workshop



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The workshop, held at FAPESP headquarters on November 29 and 30, 2023, aimed to raise awareness of collaboration possibilities between Research Centers supported by both agencies and to examine means of increasing joint actions, in preparation for collaborative calls and other actions to be launched in 2024.

Among other activities, the workshop included the institutional presentation of each center, matchmaking opportunities, and brainstorming sessions bringing together centers funded by both agencies, seeking to identify new collaboration and funding opportunities.

In particular, SMARTNESS representatives identified elements of synergy with other centers, pinpointing potential research collaborations.

Newsletter

SMARTNESS first General Meeting of 2024



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On February 2nd, 2024, the CPE SMARTNESS held its first General Meeting of the year, with the participation of approximately 40 researchers.

During the 2-hour meeting, an overview of the Center's status was presented, highlighting scientific progress by research lines. Some administrative and managerial aspects were listed. Finally, there was a period of exchange and debates, allowing for the identification of opportunities and outlining the next steps.

Prof. Christian Rothenberg, CPE SMARTNESS PI and Director, as well as the Executive Committee, thank everyone for their participation, confident that the year 2024 promises even more results and achievements.

Welcome to the new Post Doc and Extended Reality in Smartness 2030!



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Using 5G networks, XR glasses could boost diverse areas, from medicine to manufacturing, tourism and entertainment. The glasses are being tested by the collaboration network that Smartness 2030 covers, starting at UFSCar and reaching the Facens smart campus in Sorocaba. With the promise of 6G on the horizon, it is possible to expect an even greater revolution, which will open doors for innovations in various sectors. The future of technology has never seemed so close.

Smartness 2030's new postdoc, Dr. Alireza Shirmaz, studies the topic and has an ML-based model for XR technologies. Alireza will improve its methodology for identifying network traffic and balancing loads based on hardware resources. Smartness 2030 welcomes Alireza and congratulates him on getting the FAPESP postdoctoral scholarship for Smartness 2030, together with Prof. Fábio L Verdi from UFSCar.

SMARTNESS Weekly Hour - IPR at Smartness



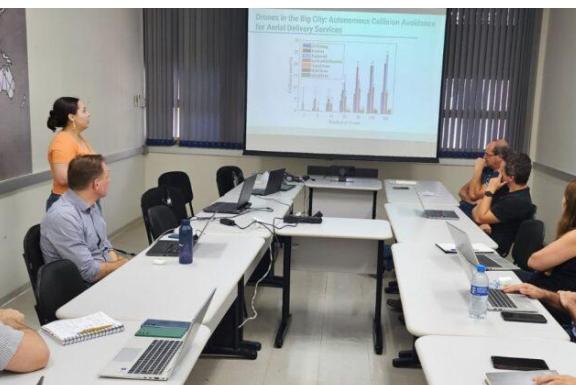
[Read more](#)

On February 23rd, 2024, the CPE SMARTNESS held its joint technical weekly hour, with the participation of approximately 30 researchers.

During the 2-hour meeting, Ericsson Research representatives presented an introductory patent workshop, covering topics such as IPR protection, patent application, and invention disclosure processes.

Prof. Christian Rothenberg, CPE SMARTNESS PI and Director, as well as the Executive Committee, thank everyone for their participation, confident that the year 2024 promises several novel and inventive results and findings to share.

Visit of Prof. Fredrik Heintz from Linköping University, Sweden



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Last February 7, Prof. Fredrik Heintz from Linköping University (LiU) visited the Laboratory of the Department of Computer Engineering and Automation (LCA) at the Universidade Estadual de Campinas (UNICAMP), to strengthen the collaboration ties with SMARTNESS and Ericsson research groups within the Distributed Edge Computing Swarm Intelligence (DEMIST) research strand.

The meeting led by Prof. Christian Rothenberg, PI and Director of CPE SMARTNESS, had as main focus the discussion of current research topics within the Work Package on Edge-assisted intelligent drone management. It also had the participation of Ericsson researchers, the UNICAMP professors Luiz Bittencourt and Fernando von Zuben, as well as the PhD student Mauricio Rodriguez and the new Post-Doctoral student Fabiola Oliveira.

Welcome the new postdoctoral researcher Fabíola Martins Campos de Oliveira!



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Smartness 2030 wants to welcome the new postdoctoral researcher Fabíola Martins Campos de Oliveira!

Under the guidance of Prof. Luiz Fernando Bittencourt, Fabíola, started a postdoctoral position at the UNICAMP Computing Institute, now at Smartness 2030. Her research focuses on drone delivery services in high-density scenarios. Fabíola is interested in optimizing different aspects of delivery services, such as maximizing the number of deliveries and minimizing delivery time and energy consumption. The first fundamental step in this research is to avoid collisions in high-density airspace. Thus, she wants to explore federated learning to avoid collisions and optimize deliveries using fog computing and 5G and 6G support.

Meet SMARTNESS in upcoming scientific events:

- **# IEEE Wireless Communications and Networking Conference (WCNC). 21–24 April 2024.** *Conrad Hotel in Dubai, United Arab Emirates*
- **# 8th IEEE International Conference on Fog and Edge Computing (ICFEC 2024). 06–09 May 2024.** *Philadelphia, USA*
- **# IEEE/IFIP Network Operations and Management Symposium. 6–10 May 2024.** *Seoul, South Korea*
- **# XLII Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos (SBRC 2024). 20–24 May 2024.** *Niteroi, Brazil*
- **# 10th IEEE International Conference on Network Softwarization. 24–28 June 2024.** *St. Louis, USA*

Stay tuned! See you!