



PANEL #5

Venice
April 2024

DataSys 2024 & ComputationWorld 2024

Theme:

**Adaptability at Work - Coping with
Systems Complexity, Scalability, and
High-Speed Communications**



CONTRIBUTORS

Venice
April 2024

Moderator

Dipl. Ing. Andrey Vukolov, Elettra Sincrotrone Trieste, Italy

Panelists

Prof. Dr. Kamesh Namuduri, University of North Texas, USA

Prof. Dr. Hans-Werner Sehring, NORDAKADEMIE gAG, Germany

Dr. Melanie Schranz, Lakeside Labs GmbH, Austria

Dipl. Ing. Andrey Vukolov, Elettra Sincrotrone Trieste, Italy

Prof. Dr. Petre Dini, IARIA, USA/EU



Panelist Position

VENICE
April 2024

- **Autonomy**

Transportation is a good example for complex systems. Air and ground transportation systems are going to transform significantly in the near future. Autonomy and AI have a significant role to play in this evolution.

- **Human in the Loop and Human on the Loop**

Humans are the ultimate decision-makers. Irrespective of the progress of technologies, humans can not be taken out from the decision-making process especially in life-critical situations.

- **Human-Autonomy Teaming (HAT)**

The above points lead to the need for effective and seamless teaming between humans and autonomy. The ability for humans and autonomy to interpret the intents of each other is critical for HAT to succeed.





Panelist Position

VENICE
April 2024

- **Challenges with virtual meetings and remote education**

- **Digital fatigue**

Regular participants in virtual work environments are suffering from mental exhaustion, limiting their capacity for doing actual work

- **Decreasing attention span**

People are getting used to “snackable” content, presentations need to be short and entertaining, making it harder to provide comprehensive content

- **Loss of social competency**

Habits and behavior change in the digital space, for example, because of missing small talk; this has “real world” implications



Hans-Werner Sehring
NORDAKADEMIE



Panelist Position

VENICE
April 2024

- **Possibilities arising from better communication technology**
 - **Virtual / augmented reality and tangible interfaces make the boundary between the physical and digital worlds more permeable**
Communication patterns that mimic or replace the “real world” have yet to be found;
Conferencing rooms for hybrid meetings;
Colleagues’ research project CrossLab to remotely use physical laboratories
 - **Omnichannel communication integrates communication channels**
Video conferences, chats, mails, etc. should not simply coexist and increase cognitive load
Rather, they should be interchangeable interfaces that can be used depending on the context
 - **Research needed for both technologies and collaboration behavior**



Hans-Werner Sehring
NORDAKADEMIE



Panelist Position

Venice
April 2024

A culture of adaptability, lifelong learning and agile thinking fosters innovation and growth in modern work environments.

Importance of Adaptability

- Openness to Change.
- Continuous Skill Acquisition.

Importance of Resilience and Stress Management:

Coping with complexity, scalability, and fast-paced communication can lead to stress and overwhelm. Employees need to have mechanisms and strategies in place to handle this pressure.



Melanie Schranz
LAKESIDE LABS



Panelist Position

Venice
April 2024

■ Cultivating Adaptability, Lifelong Learning, and Agile Thinking

- This needs to be actively promoted and supported by the employer, e.g., via
 - **Creating a Supportive Environment:** Employers should create an environment that encourages openness to change and experimentation. Employees should feel empowered to bring forth new ideas and explore novel approaches to address challenges.
 - **Investing in Training and Development:** Employers should allocate resources for training programs that enable employees to continuously acquire new (technical) skills and develop professionally.
 - **Establishing Feedback Mechanisms:** Regular feedback is crucial for employees to know how they can further develop. Employers should create an atmosphere where constructive feedback is encouraged, both from supervisors and peers, and provide avenues to set and track individual growth, AND work-life balance goals.
 - **Flexibility in Work Structures:** Flexible work arrangements such as flexible hours, remote work options, and other flexible work structures can make it easier for employees to adapt to changes and achieve work-life balance. This can help enhance employee engagement and satisfaction.
 - **Leading by Example from Senior Management:** Leaders should embody the values of adaptability, lifelong learning, and agile thinking themselves, and demonstrate these in their daily actions. This sends a clear message about what is valued and encouraged within the organization.



Melanie Schranz
LAKESIDE LABS



Panelist Position

Venice
April 2024

- **Adaptability as a need, still, caution is the Key concern**
- **Our Society is changing, our behavior should, too!**
- **Deskilling, AI-based coaching, 2nd opinion, assist-vs-decide**
 - Loosing training skills
 - + personalized AI-based training (as *tutoring systems*)
 - + personalized AI-based (as *expert systems*) assistance
- **Social Adaptability vs. Reluctance**
 - Uninformed (Ignorance) and Informed (hesitation)
 - Personalized cookies vs accept all
 - Download apps with unknown redirections (hides links)
 - Insert credits card in any street pole (payment 'meter')



Petre Dini
IARIA



Panelist Position

Venice
April 2024

■ Adaptation on Human and AI-based critical decision systems

■ Assisting: Decision paradigm change

- AI and the Human brain need to be used in conjunction; one is not to replace the other
- *bias* and *trade-offs* must be cleared by humans.
- Human + AI-based decisions need *personalized H-AI context-based training*.
The feedback loop must be updated based in *success-index* of cooperation
(see Intelligent Tutorial Systems).
- *Revisit*: Replace - Assist - Advice | Feedback-by-request, Suggestions-by-predictions
- *Validation*: Validate synchronization duration | Validate use case scenarios
- *Flow*: AI (Personalized-AI) & in-Context (Human skills) -->> Assisted decisions



Petre Dini
IARIA

■ Personalized AI for critical system resilience

- *Metaverse* is training the AI-based tools with virtual models;
- *Simulations, Digital Twins* accelerate the system deployments, but no real-world environments.
- Latency, reliability, synchronization (for collaborative work)

- *Digital-twin* approach can be used for a dry-training AI-Humans for specific tasks
- *Decision prediction* and *feedback as options*.
- *Updated training* and *real-time impact feedback*.



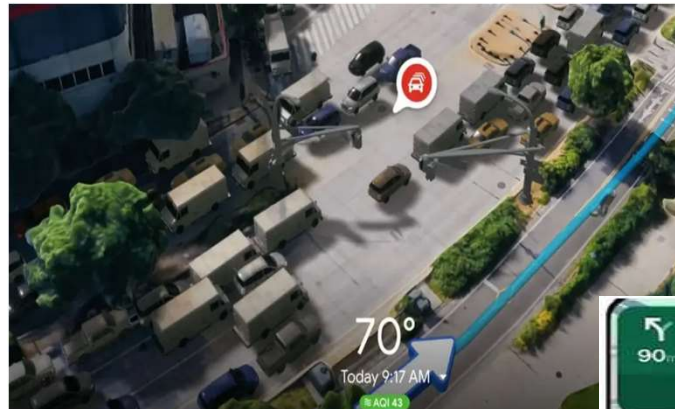
Panelist Position

Venice
April 2024



Google Maps getting major upgrade thanks to new trend taking world by storm

Google Maps gets a massive AI upgrade with 5 new features
The latest updates to Google Maps makes it smarter and more helpful
<https://www.foxnews.com/tech/google-maps-gets-massive-ai-upgrade-5-new-features>



3D with Immersive View



Petre Dini
IARIA

