NeuroIS SOCIETY

The NeuroIS Society Magazine

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COVER STORY

The Persuasion Code of Virtual Influencers

IN THE SPOTLIGHT

DigiSpace
University of Applied Sciences
Upper Austria Campus Steyr

YOUNG ACADEMICS

Bernhard Lutz
University
of Vienna

Preface

Dear Readers!

We are delighted to present the latest issue of the NeuroIS Society Magazine, which once again showcases the breadth and vitality of research and community activities in our field. The articles in this edition demonstrate how NeuroIS continues to evolve — conceptually, methodologically, and institutionally — while maintaining its unique focus on understanding the human mind in digital contexts.

The cover story, "The Persuasion Code of Virtual Influencers: What Brain Data Reveals About Why We Follow Them — or Not," by Colin Conrad, Anika Nissen, Aaron Newman, and Isabella Seeber, addresses one of today's most relevant topics: artificial intelligence and social influence. Using EEG and fNIRS methods, the authors provide novel insights into why virtual influencers — entirely synthetic online personas — can persuade audiences almost as effectively as humans. Their findings illuminate how expectation, emotion, and cognitive effort jointly shape digital persuasion, offering a compelling example of how NeuroIS helps explain emerging forms of human-AI interaction.

In the following article, René Riedl introduces the DigiSpace at the University of Applied Sciences Upper Austria, Campus Steyr — a modern environment for digitalization research and industry collaboration. This living laboratory exemplifies how NeuroIS methodologies can be embedded in real-world innovation settings. With facilities for behavioral analysis, physiological measurement, and immersive simulation, the DigiSpace bridges academic research, teaching, and industrial practice — showing how the human factor remains central to digital transformation.

Next, a post-AMCIS (Americas Conference on Information Systems) workshop report by the Tech3Lab team at HEC Montréal highlights the global reach and growing methodological rigor of the NeuroIS community. Bringing together scholars from across the Americas and other areas, the event showcased multimodal approaches that integrate behavioral, physiological, and AI-based data analytics. The workshop not only reflected the field's momentum but also underlined its commitment to translating neuroscientific insight into actionable knowledge for the design of adaptive, human-centered systems.

The NeuroIS Retreat 2025 Review and 2026 Outlook takes us to Vienna, where the 17th edition of the retreat reaffirmed the strong sense of community that defines our field. From Moritz Grosse-Wentrup's visionary keynote on brain-AI interfaces to Silvia Kober's exploration of cybersickness, the program highlighted the diversity and rigor of current NeuroIS research. Discussions on artificial intelligence, user interface design, and methodological innovation reflected both continuity and renewal within the community. The retreat once again demonstrated how scholarly excellence and collegial exchange go hand in hand at this flagship event.

In our researcher portrait, Bernhard Lutz from the University of Vienna shares his academic journey into NeuroIS — from early collaborations and experimental challenges to his reflections on interdisciplinary learning. His experiences capture the spirit of curiosity and resilience that define the next generation of NeuroIS scholars. His perspective reminds us that behind every dataset and publication lies a human story of persistence, learning, and discovery.

The final contribution revisits one of the foundational ideas in our field. Martin Reuter's "Genetic Approaches to the Field of NeuroIS" highlights how molecular genetics is becoming an integral part of understanding individual differences in technology-related cognition and behavior. Building on Reuter's pioneering keynote at the 2011 retreat and subsequent studies, this article illustrates how genetic insights can complement neurophysiological data — paving the way toward more biologically informed theories of technology use and user diversity.

Together, these contributions reflect the richness and interdisciplinarity of NeuroIS today — a field that connects neuroscience, psychology, genetics, and information systems to better understand human experience in digital environments. As we look forward to the NeuroIS Retreat 2026 in Vienna, we extend our gratitude to all contributors, reviewers, and readers who continue to advance this exciting domain through their creativity and engagement.

We wish you an inspiring and enjoyable read!

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The Persuasion Code of Virtual Influencers: What Brain Data Reveals About Why We Follow Them—Or Not

By Colin Conrad, Anika Nissen, Aaron Newman, and Isabella Seeber

Online content, which used to be solely made by humans, is increasingly being manufactured by artificial intelligence (AI). A recent study by Ahrefs, an online marketing consultancy, concluded that at least 70% of online content is AI generated in some way.[1] Ubiquitous AI-generated content has even given rise to "virtual influencers"[2], which are fictional characters that sometimes have millions of followers on social media. These accounts are highly valuable, often generating tens of millions of dollars per year in revenue[3], and may be taking an increasingly larger share of the online content market in light of the rapid developments in generative AI.

A few years ago, we started a series of research projects that sought to answer why people follow the advice of virtual influencers (VIs), even when they know that they aren't real. We did not know it at the time, but this question sent us on a journey that would span continents as we sought to navigate an increasingly complex world of AI generated content. This ultimately culminated in our recently published findings, where we derived theories on this topic from the human brain.[4]

Our approach was motivated by what seemed to be a contradiction in the literature. Some research found that VIs worked much the same way as human influencers; factors like their appearance, human-likeness, credibility, and fit to a brand influenced their persuasiveness. Some of these reports even suggested that human influencers consistently outperformed the VIs. However, others found the opposite, and some found that VIs were interpreted differently from their human counterparts. Most of these studies used self-report approaches. This motivated us to ask: what happens in the brain when people evaluate virtual versus human influencers and how can we inform theory by this?

We took an inductive approach to the problem starting with neurophysiology. By taking this approach, we could gain insights into the processes that led to the specific evaluations of VIs.

Inside the Brain of a Follower

Part 1: EEG Measures of Emotions and Uncanniness

Our research started with an electroencephalography (EEG) study that was conducted at the NeuroCognitive Imaging Lab at Dalhousie University, Canada. EEG measures brain activity changing on the order of thousandths of a second, and when time-locked to specific stimuli, researchers can use EEG to measure brain correlates of cognitive processes. These correlates are called event-related potentials (ERPs) and have been well-studied by neuroscientists to be reliably associated with a range of reactions, including uncanniness and emotional processing.

We created an experiment during which a series of pictures were presented. Half of the pictures were of female Instagram influencers, and the other half consisted of pictures of self-identified VIs which also had popular Instagram accounts and resembled the human influencers with regard of appearance. When each picture was presented, a marker was set in the EEG data. Following the presentation of the picture, participants completed brief questionnaires. The time-locked data were then compared with the questionnaires and processed using a version of the Dalhousie NeuroCognitive Imaging Lab's Python data pipeline.

What we found were two distinct patterns that were statistically distinct. The first pattern was an early pattern that corresponded what neuroscientists have called the N400. This pattern was present in all stimuli, but it was larger when elicited by the virtual influencers. The N400 has been found in prior literature to be associated with the perceived uncanniness of human faces[5], as well as many other studies to be associated with inconsistent information. In our data, it was found to be correlated with participants' ratings of perceived uncanniness of the influencer images we showed, but also negatively associated with intent to follow recommendations.

The second later pattern corresponded to a reaction called the late-positive-potential (LPP). Neuroscience literature has established a link between the size of the LPP and the strength of emotional reactions, including reactions to computer-related images.[6] We discovered much stronger LPP reactions elicited by the images of human influencers when compared to the virtual influencers. Furthermore, there was a correlation between the LPP and intent to follow the influencer's recommendations.

Part 2: fNIRS Measures of Emotion and Trust

While the EEG study provided some insights into the mechanisms behind intentions, it did not provide insight into the brain regions involved. We thus conducted a second study using functional near infrared spectroscopy (fNIRS) with prefrontal cortex (PFC) coverage, at the University of Duisburg-Essen, Germany. Unlike EEG, fNIRS measures the hemodynamic response (blood oxygenation in specific brain regions) using infrared sensors. While the technique has much poorer time resolution than EEG, it has better spatial resolution and is well-suited to identifying the brain locations involved in the assessment of VIs.

The experiment was very similar to the first one, including the same self-report measures, though with longer image presentation times. The hemodynamic response detected by fNIRS requires around four seconds to yield accurate results, so the experiment had to be configured for slower presentations. The time-locked data was similarly extracted and analyzed, this time using the BrainAnalyzIR toolbox in Matlab.

The results of the study found that the German participants had similar self-reports to the Canadian, in the sense that they consistently found virtual influencers to be less influential, less trustworthy, and more uncanny. The fNIRS results indicated reduced neural activation in the lateral prefrontal cortex (lPFC) associated with the virtual influencers, and that this pattern was also correlated with trust evaluations. Greater LPFC activation is also well-studied by neuroscientists in association with cognitive effort and working memory activation.

From Brainwaves to Theory: Three Theoretical Explanations of Influence

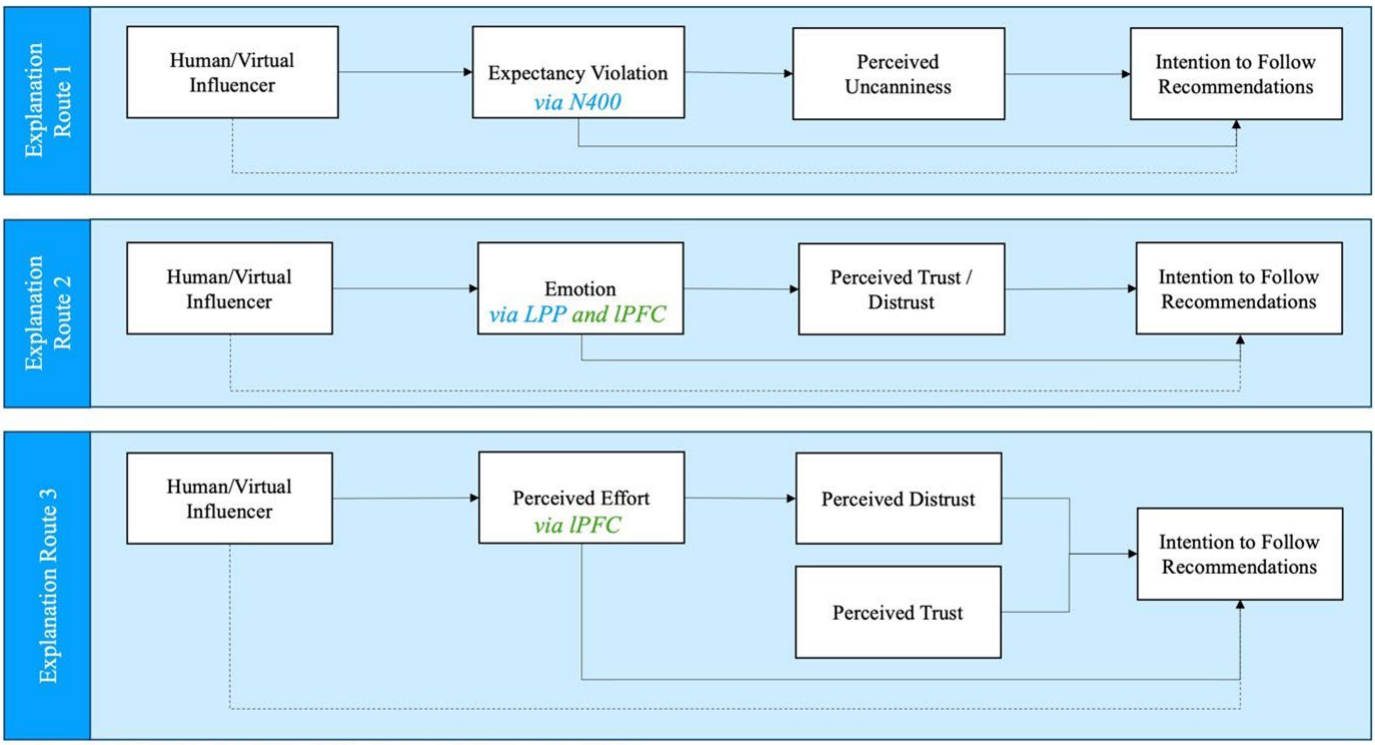
The results of the studies provided evidence for some of the user evaluations that predict intentions to follow recommendations. However, the data from the studies also provided neuroimaging evidence for some of the cognitive mechanisms that link the brain to the evaluations. When considering the data, we found three explanations of the results.

The first explanation was that expectancy violation led to the feeling of uncanniness, and in turn decreased intentions to follow recommendations. VIs were found to trigger a N400 brain response that is similar to when people encounter unexpected information. The neuroscience literature had long established the link between the N400 and semantic mismatch (e.g., the phrase "I take my coffee with milk and dog"), though in recent years neuroscientists have interpreted it as a pattern of a violation of expectations based on long-term memory and world experience, broadly.[7] In our data, we interpreted this to represent a state of cognitive surprise or a violation of expectation that leads to a sense of eerie strangeness about the Vis (see top panel of the following figure).

The second explanation concerned the relationship between emotional engagement and the formation of trust and distrust. Elevated LPP signals are associated with emotional engagement towards the human influencers and intention to trust their advice. Similarly, the lPFC was associated with trust evaluations. We interpreted our data to indicate that emotional reactions predicted trust and distrust, which are the emotional foundation of persuasion (second panel of the following figure).

The third explanation concerned the impact of cognitive effort on intentions to follow influencers' advice. The lPFC and LPP are not just associated with emotional processing, but of mental effort. When users invest more mental energy in processing an influencer, they may be more likely to act on recommendations—even if they know it's artificial. The data was similarly interpreted to indicate a relationship between mental effort in distrust and persuasion (third panel of the following figure).

These three theoretical explanations were validated in an online experiment using questionnaires. We found evidence for all three explanations.



** Result of EEG Study (N400, LPP), Result of fNIRS study (lPFC)*

Significance

These three theoretical explanations—expectancy violation, emotion, and cognitive effort—form a new theoretical framework that help explain how traditional constructs like human-likeness, trust, and uncanniness are formed toward synthetic content.

The implications extend beyond influencer marketing. This work demonstrates how neuroscience can inform information systems theory—a field traditionally grounded in behavioral models and self-reported data. The findings hint at how AI-generated agents might better mimic human persuasion by dynamically managing user expectations, emotion, and cognitive effort. Our research also shows how subtle differences in stimulus type—human versus virtual—recruit different brain systems for social cognition. Finally, this approach offers a blueprint for exploratory, inductive NeuroIS research: start with neural observation, derive theory, and validate it behaviorally. In doing so, we can uncover the hidden cognitive mechanisms that underlie digital behavior—without relying solely on what people say they feel.

Next Steps

As generative AI advances, the line between real and virtual influencers will blur further. Already, photorealistic avatars powered by large language models can chat, improvise, and adapt to users' emotional states. Understanding how the human brain reacts to these agents will become essential—not just for marketing, but for ethics, design, and mental well-being. While we have wrapped up this project, there are still many questions that are left unanswered. Are these explanations examples of three different theories, or different aspects of a single theory about influencers? Today there are more challenges related to the ubiquity of AI generated content, as well as people's ability to distinguish content generated by humans from that made by AI. As our future research develops, we hope to explore these new challenges to ultimately explain why and how people interact with AI generated information. As AI-generated agents become ever more lifelike, the question is not whether we'll follow them—but whether we'll recognize when our brains already have.

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Aaron Newman, Colin Conrad, and Anika Nissen at CHI 2023, where an early version of the work was initially presented.

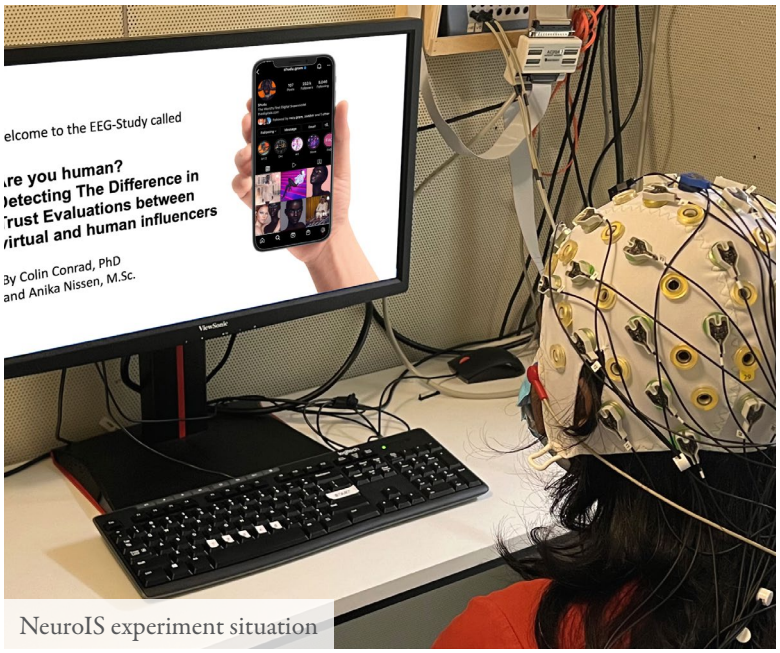
Colin Conraed and Anika Nissen at Dalhousie University

Colin Conrad –
Dalhousie University, Canada

Aaron Newman –
Dalhousie University, Canada

Anika Nissen –
FernUniversität in Hagen, Germany

Isabella Seeber –
Grenoble Ecole de Management, France



NeuroIS experiment situation

Anika Nissen with fNIRS

DigiSpace: A Hub for Digitalization Research, Teaching, and Industry Transfer

by René Riedl

At the University of Applied Sciences Upper Austria, Campus Steyr, digital transformation is not treated as a purely technological shift — it is a human experience. The DigiSpace offers a unique environment, enabling a multi-dimensional understanding of how people interact with, design, and adapt to digital systems.

A Space of Digital Possibilities

The DigiSpace is a research and innovation facility spanning more than 500 m^2 over two levels in Steyr, Austria. It serves as a living laboratory for exploring digital transformation from both technological and human perspectives. Here, researchers, students, and industry partners collaborate to experiment with digital tools, analyze human–machine interaction, and prototype new forms of digital value creation.

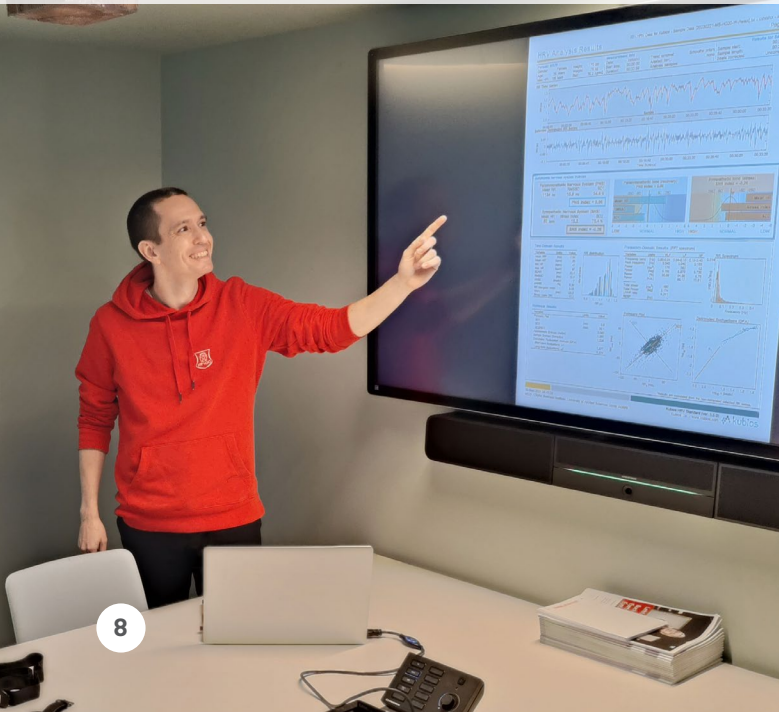
The facility integrates three main zones: Digital Boardroom – an interactive space for digital strategy simulation and teamwork analysis, equipped with a large LED wall and multiple touch-workstations. Behavioral Analysis Labs – dedicated to the study of human behavior through observation, eye-tracking, and physiological measurement. Smart Production Area – a modular environment with collaborative robots, 3D printing, and AR/VR systems for studying smart manufacturing and automation. Together, these zones enable researchers to collect a wide variety of behavioral, physiological, and experiential data, providing a comprehensive understanding of how people experience digitalization.

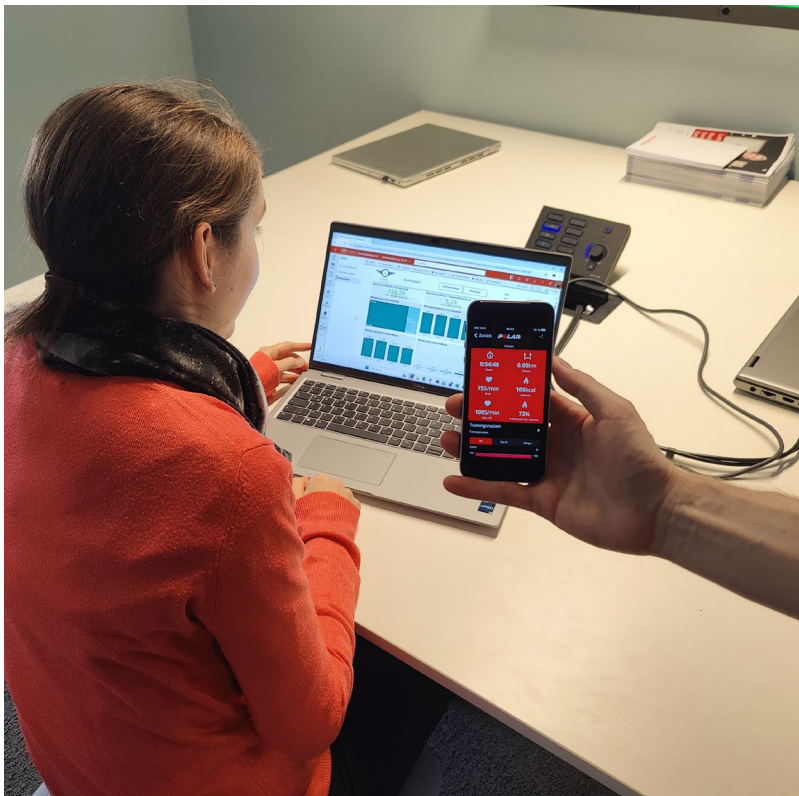
The Human as Research Focus in Digital Transformation

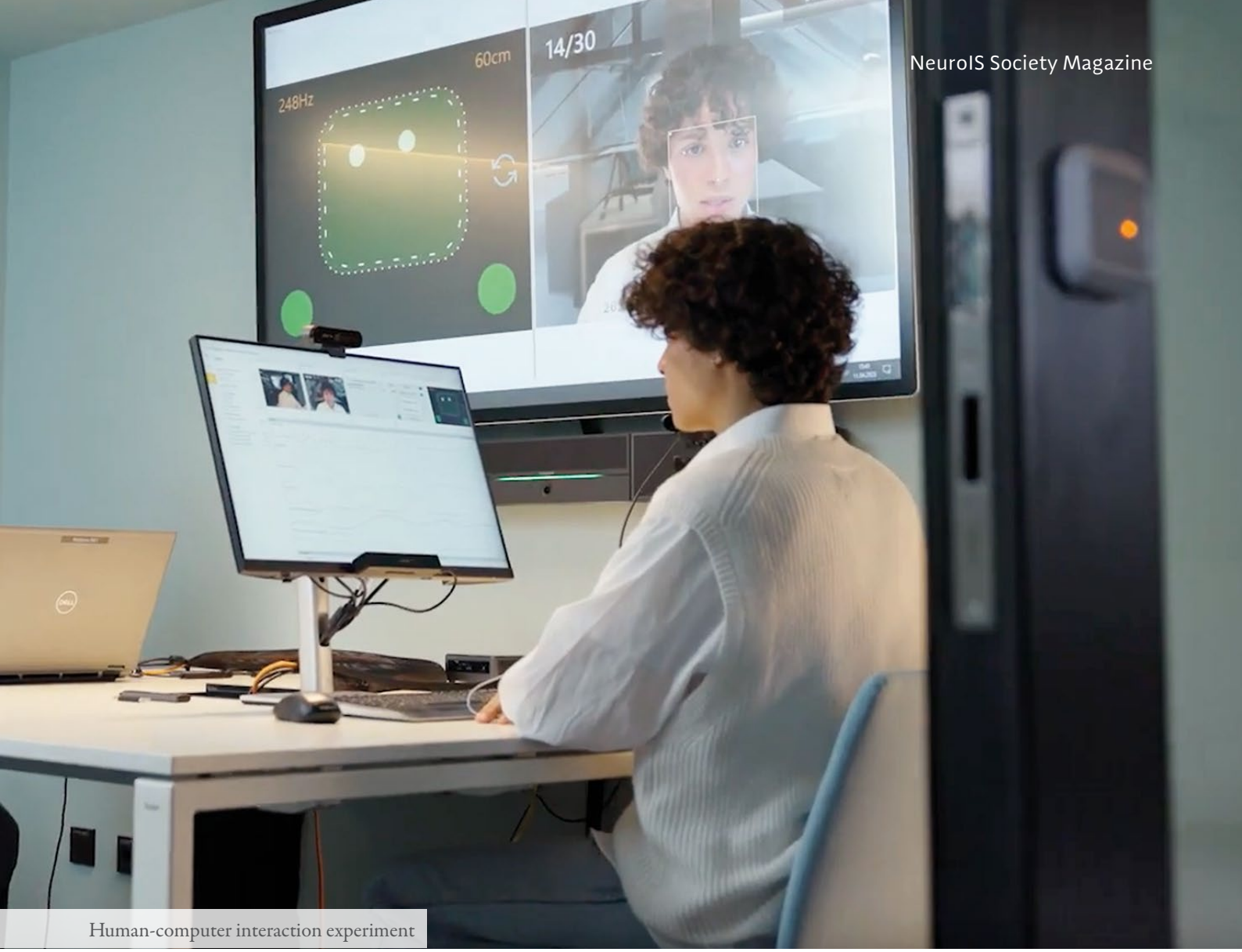
Research at the DigiSpace focuses on understanding how individuals and teams engage with technology during digital transformation. Example topics include: technology acceptance and digital stress, attention and cognitive load in digital interfaces, developer behavior in automation and AI-supported work, team dynamics in hybrid and virtual collaboration. What distinguishes DigiSpace research is the integration of self-report, behavioral observation, and neurophysiological measurement. Specifically, the research teams employs physiological methods drawn from autonomic nervous system research — capturing heart rate (HR), heart rate variability (HRV), skin conductance, and eye-tracking data to also understand unconscious reactions during human interaction with digital technologies.

These measures provide insight into moment-to-moment physiological and attentional responses that reflect stress, engagement, overload, and more, which traditional surveys or log data cannot capture. By combining physiological measures with behavioral data (task times, error rates) and subjective responses (usability, satisfaction), the DigiSpace team achieves a multi-layered understanding of user and developer behavior.

Fabian Stangl with study participant, human-computer interaction experiment with heart rate and HRV measurement in the DigiSpace







Human-computer interaction experiment

Thematic Focus Areas

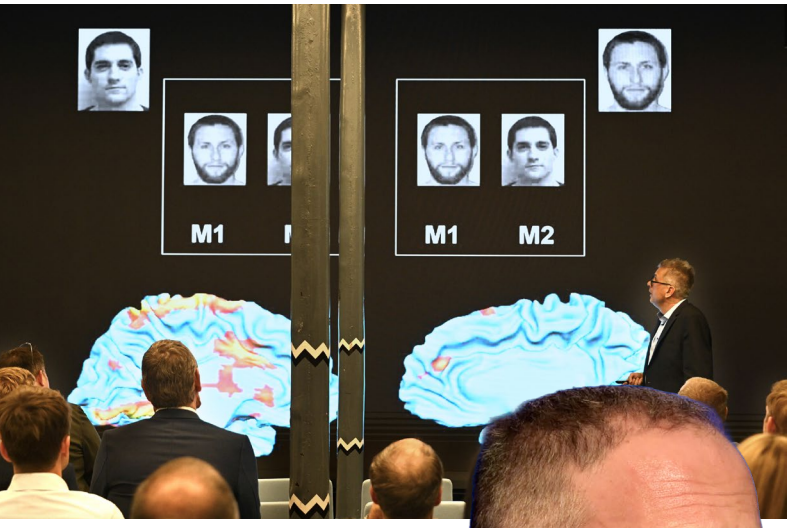
The DigiSpace's content orientation is structured around six core thematic areas, which align with both our teaching programs and our research agenda.

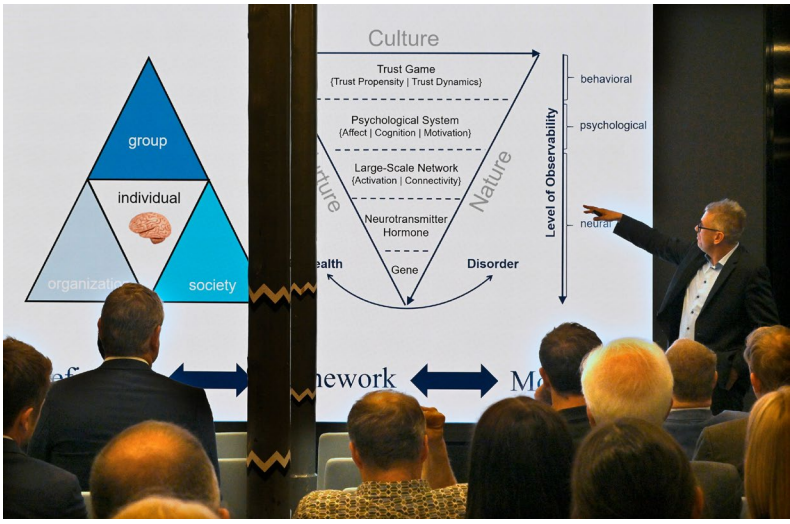
- **Data-driven Management of Companies** – including big data / AI-supported decision-making, new management dashboards, enterprise analytics, and mobile reporting.
- **Digital Process Design in Companies** – covering process mining, robotic process automation, chatbots, augmented/mixed/virtual reality, digital twins, marketing, and business intelligence.
- **Digital Products and Services** – such as servitization, data-driven sales processes, customer-relationship innovations, and digital sales processes.
- **Digital Business Models** – business-model simulation, prototyping, revenue model innovation, organizational transformation as a consequence of business-model change, and start-up support.
- **Digital Value-Creation Networks** – blockchain, smart contracts, web-mining, open-data, and supply-chain visualization.
- **The Human in the Digital Work Environment** – digital literacy, technology acceptance, digital stress, ergonomics and usability, change management, agility, virtual collaboration (with intercultural/global leadership), workplace design, media usage and impact, and social implications of digitalization.

Methodological Innovation: Where NeuroIS Meets Practice

The DigiSpace embodies the methodological essence of NeuroIS. Rather than relying on a single data type, DigiSpace merges self-report data to capture conscious attitudes and experiences, behavioral observations to detect real-time interaction patterns, and physiological data, such as heart rate and heart rate variability, to detect stress and arousal. DigiSpace also uses eye tracking to measure attention and cognitive load. This integrated approach enables researchers to examine not just how digital systems are used, but also how they feel to users. DigiSpace bridges the gap between laboratory precision and ecological validity by studying people in realistic digital scenarios such as smart production, data-driven decision-making, hybrid collaboration, and agile software development.

From left to right: Michael Affenzeller (FH OÖ), René Riedl (FH OÖ / JKU Linz), Frank Krueger (George Mason University, USA), René Mayrhofer (JKU Linz), Klaus Buttinger (OÖN), Edith Mairhofer-Eder (Raiffeisen Software), Heimo Losbichler (FH OÖ)





Klaus Arthofer,
Coordinator of the DigiSpace

From Insight to Impact

The DigiSpace is a research facility and teaching hub that serves as a center for collaboration and knowledge transfer. Industry partners collaborate with researchers to test digital tools, evaluate AI-driven decision support systems, and analyze user experience. These partnerships foster innovation by translating human-centered insights into practical digital transformation solutions. Students participate in research projects, gaining hands-on experience combining behavioral analytics with physiological measurements. These experiences prepare the next generation of professionals to understand the intersection of technology and human behavior.

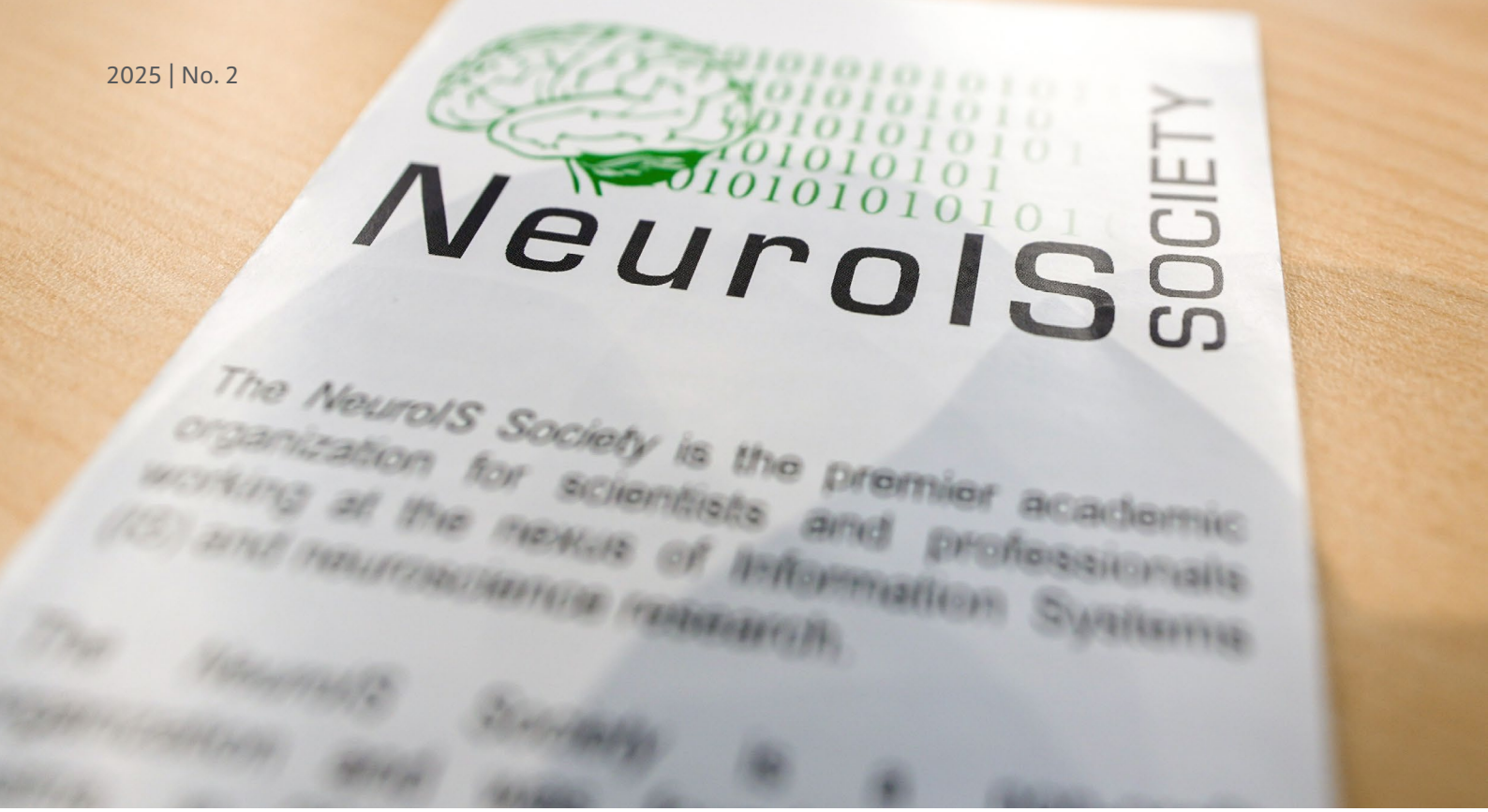
Venue for Scientific and Managerial Exchange

The DigiSpace is more than an environment for research and experimentation. It is also a venue for intellectual exchange. The facility regularly opens its doors to renowned scientists, thought leaders, and top executives, transforming into a dynamic space where science, business, and society converge. These events promote dialogue about the latest research and development results from the University of Applied Sciences Upper Austria, making them accessible to the public.

One of the highlights was the visit of Prof. Frank Krueger, an internationally renowned researcher from the United States known for his work on the neurobiological foundations of trust. In a keynote lecture presented in the immersive DigiSpace environment, Krueger discussed how trust develops in the human brain and how artificial intelligence affects these mechanisms. Afterwards, Krueger participated in an open discussion with scientists, media representatives, and practitioners. This lively exchange bridged the fields of neuroscience, digital ethics, and managerial practice.

Events like this one exemplify the DigiSpace's purpose of bringing people, data, and ideas together to explore the human aspect of digital transformation. By hosting international experts and connecting them with local researchers, students, and industry leaders, the DigiSpace strengthens its position as a hub for applied research and networking, where academic excellence meets real-world relevance and dialogue sparks innovation.

Augmented reality / virtual reality experiment



NeuroIS Workshop: Post-AMCIS Event Report

Report by Tech3Lab, HEC Montréal

Following the 2025 Americas Conference on Information Systems (AMCIS) in Montréal, the NeuroIS community convened on August 18, 2025, for a post-conference workshop hosted by Tech3Lab at HEC Montréal. Organized by Professors Pierre-Majorique Léger, Constantinos K. Coursaris, and Sylvain Sénécal in collaboration with the NeuroIS Society, the event brought together researchers and practitioners from across the Americas and Europe for a full day of exchange and cooperation.

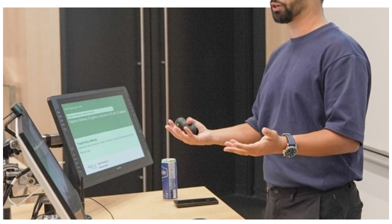
The workshop opened with a lively introduction and quickly evolved into an inspiring series of short, high-quality presentations that showcased the growing diversity of NeuroIS research. Nearly twenty contributions on ongoing projects were featured in the program, each benefiting from community feedback in the spirit of the developmental approach that defines the NeuroIS community's constructive culture.

The presentations covered a wide range of topics, illustrating the expanding scope and relevance of NeuroIS. The agenda reflected this richness, from adaptive AI systems helping firefighters make more informed emergency decisions to biometric feedback enhancing touch-typing performance. Attendees learned about emotion regulation in human-AI interactions, digital interventions that shape user behavior, and the application of cognitive fit theory to creative insight. Other studies examined generative AI transparency, social media misinformation, neuroadaptive learning systems, and deep learning models that detect visual fatigue, cognitive load, and visual inhibition. Presenters also explored how interface design can interrupt visual automaticity and how AI surrogates are influencing online shopping behavior.

A strong methodological trend was also evident. NeuroIS research is increasingly adopting multimodal, data-rich approaches that integrate physiological, behavioral, and self-report measures to capture cognition and emotion in real time. Many projects employed experimental paradigms, such as the Stroop and N-back tasks, which are well-established in cognitive neuroscience and have now been adapted for information systems contexts.

Presenters included Colin Conrad, Adriane B. Randolph, Alejandra Ruiz-Segura, Burak Öz, Atul Sharma, Victoria Okesipe, Thi Huyen Ngoc Dong, Dinko Bačić, Katrina Sollazzo, Sirui Qiu, Izabelle Quezado, Félix Giroux, Tucker Todd, Fateme Kiaei, Ruojun (Rachel) Wang, Thaddé Rolon-Merette, Gabriel Hardy-Joseph, Charles Bélanger, Randall Minas, Zoubeir Tkiouat, and Alexander Karran. Many graduate students also had the chance to participate and be inspired by the community's constructive and collaborative spirit.

The day concluded with a guided tour and live demonstration at Tech3Lab, where participants experienced one of the world's most advanced academic laboratories for studying user experience through behavioral and neurophysiological measures. The lab's integration of biosensors, immersive environments, and AI-driven analytics offered a vivid glimpse into the future of NeuroIS research. This post-AMCIS workshop captured the momentum of the field, showcasing a growing community that unites neuroscience and data science while reaffirming its mission to understand how humans think, feel, and decide in an increasingly digital world.




tech3lab

NeuroIS Retreat: 2025 Review and 2026 Outlook

The 2025 NeuroIS Retreat — held from May 26-28 at the Hotel Schloss Wilhelminenberg in Vienna, Austria — brought together an engaged community of senior scholars and emerging researchers, offering a vibrant forum for the exchange of ideas relevant to both academic inquiry and managerial practice.

In their reflections, the conference and program chairs stressed both continuity and growth within the NeuroIS research community. Gernot R. Müller-Putz noted his pleasure at returning to Vienna for the retreat's 17th edition, and emphasised the increasing role of artificial intelligence (AI) in NeuroIS, and specifically its potential to inspire novel experimental approaches and research findings. Fred D. Davis also observed the strong presence of AI in this year's discussions, particularly around generative AI and large language models, and their implications for creativity, education, and industry. Pierre-Majorique Léger, reflecting on more than 15 years of involvement with the retreat, praised the community's remarkable methodological advances and the substantial contributions of doctoral researchers. Adriane B. Randolph emphasized the event's dynamic, interdisciplinary character — noting that roughly half of this year's attendees were newcomers to the community — thereby enriching conversations across domains such as marketing, brain-computer interfaces and beyond, all while maintaining the retreat's intimate atmosphere. Jan vom Brocke highlighted the special community ethos of the NeuroIS Retreat, which continues to draw colleagues year after year. René Riedl thanked all participants and reiterated the prominent role of AI in NeuroIS research at this year's meeting.

A total of 30 research papers were presented. As in previous years, the variety of topics and research methods was impressive. Methods included EEG, fNIRS, eye tracking, heart rate, as well as several other neuroimaging techniques. Importantly, several presentations addressed the opportunities and challenges of AI and generative AI, while others looked at driving simulation, stress, attention mechanisms, mindfulness, cyber-loafing, investor behavior, and user-experience design.

The program featured an inspiring keynote address by Prof. Dr. Moritz Grosse-Wentrup, Head of the Neuroinformatics Research Group at the University of Vienna. In his talk "Brain-Artificial Intelligence Interfaces: The Convergence of Artificial and Biological Intelligence," he argued that the next evolutionary step in BCI research is the development of brain-AI interfaces (BAIs). Unlike traditional BCIs, which focus on decoding cognitive states or commands, BAIs integrate AI systems directly into cognitive processing. He illustrated how BAIs could transform human-AI collaboration by interpreting high-level intentions from brain activity and executing them through large language models — examples ranged from stroke rehabilitation to communication support for paralyzed patients. His prototype conversational BAI demonstrated how combining neural signals with AI-driven systems can augment human cognition and simplify complex communication tasks. The keynote concluded with reflections on how blending biological and artificial intelligence might reshape cognitive augmentation, rehabilitation, and human-machine interaction in the years ahead.

Complementing the keynote, Dr. Silvia E. Kober, Senior Scientist in the Department of Neuropsychology and Neuroimaging at the University of Graz, delivered a hot-topic talk entitled "Why Do I Feel Sick in Virtual Worlds? – Interindividual Differences in Cybersickness in Virtual Realities, Neurophysiological Correlates, and

Methods to Manipulate It." She examined cybersickness — a critical barrier to immersive virtual-reality technology in entertainment, education, training, and professional settings. Drawing on her neuroscientific expertise, Dr. Kober explained that susceptibility to cybersickness varies across individuals, depending on factors such as age, gender, prior VR experience, and system design. She discussed neurophysiological correlates of cybersickness — drawing on EEG, fNIRS, and eye-tracking research — and presented measurement and mitigation strategies. Notably, she addressed adaptive interventions and placebo-based approaches to alleviate symptoms and enhance human–VR interaction. Her presentation underlined the importance of combining neuroscientific insight with system design to build safe, effective and enjoyable virtual environments.

Moreover, the program featured a forward-looking panel discussion, "Building the Next Generation of NeuroIS Scholars: Lessons Learned, Challenges Overcome, and Future Directions for the Field." Panelists – Pierre-Majorique Léger (HEC Montréal), Bonnie B. Anderson (Brigham Young University), Randall K. Minas (University of Hawaii), Gernot R. Müller-Putz (Graz University of Technology), Adriane B. Randolph (Kennesaw State University), and René Riedl (University of Applied Sciences Upper Austria & JKU Linz) – reflected on more than 17 years of the NeuroIS community and the retreat's central role in nurturing early-career scholars. They shared personal insights on mentoring students, navigating methodological and interdisciplinary challenges, and forging sustainable research careers. They also addressed the implications of disruptive technologies such as generative AI, virtual reality, and brain–computer interfaces for IS research. They emphasized the importance of preserving methodological rigor while embracing innovation. The session concluded with a discussion of how the community can continue to foster intellectual curiosity, collaboration and professional growth, while retaining the retreat's characteristic blend of intimacy and scholarly excellence.

Overall, the 2025 NeuroIS Retreat was a highly successful event, characterized by engaging presentations, thought-provoking discussions, and a rich variety of methods and topics. A video summarizing the event is available on the NeuroIS Society website, and many photographs of the conference are posted there as well.

Moritz Grosse-Wentrup, keynote speaker

Conference co-chairs and program co-chairs: René Riedl, Gernot R. Müller-Putz, Adriane B. Randolph, Pierre-Majorique Léger, Fred D. Davis, Jan vom Brocke (from left to right)

Award Winners

Another highlight of the conference was the awards ceremony, which recognized the following winners: The Dr. Hermann Zemlicka Award for the most visionary paper went to Hemin Jiang, from the University of Science and Technology of China, and Wenpei Zhang, from Anhui University of Technology in China, for their paper "Understanding the Impact of Cyberloafing on the Multiple Dimensions of Individual Attention: An EEG-Based Lab Experiment". Bonnie B. Anderson, from Brigham Young University (USA), received the Best Reviewer Award.

Handover of the Dr. Hermann Zemlicka Award by the organizing committee to Hemin Jiang (from left to right: Pierre-Majorique Léger, Adriane B. Randolph, René Riedl, Hemin Jiang, Fred D. Davis, and Gernot R. Müller-Putz)

Handover of the Best Reviewer Award by the organizing committee to Bonnie B. Anderson (from left to right: Pierre-Majorique Léger, Adriane B. Randolph, René Riedl, Bonnie B. Anderson, Fred D. Davis, and Gernot R. Müller-Putz)

www.neurois.org/video-of-the-neurois-retreat-2025

NeuroIS Retreat 2026

We invite scientists, as well as practitioners with an interest in academic research, to participate at the NeuroIS Retreat 2026. Specifically, the organizing committee welcomes not only completed research, but also work in progress. If you are interested in presenting your research or development project, please submit your paper (please see the submission guidelines at www.NeuroIS.org). English is the language of the conference and of all submissions.

NeuroIS studies comprise conceptual and empirical works, as well as theoretical and design science research. It includes research based on all types of neuroscience and physiological methods. Submissions must be original, and they cannot have been published in another publication outlet. Contributions may address the following topics, among others:

» Employment of neurophysiological tools to study IS phenomena (e.g., technology adoption, mental workload, website design, flow, virtual worlds and metaverse, emotions and human-computer interaction, e-commerce, biofeedback, social networks, information behavior, trust, IT security, usability, avatars, music and user interfaces, multitasking, memory, attention, IS design science, risk, knowledge processes, business process modeling, ERP systems, and LLMs such as ChatGPT, Gemini, or Copilot, and industrial or medical AI applications)

» Application of psychophysiological approaches to study technostress, videoconference fatigue, information overload, and IT addiction

» Identification of the neural correlates of IS constructs based on neuroscience methods

» Neuroadaptive systems and software prototypes of NeuroIS applications, which use biosignals (e.g., EEG, skin conductance, pupil dilation) as system input

» Discussion of methodological and ethical issues and evaluation of the status of the NeuroIS field

The NeuroIS Retreat 2026 will take place from June 2–4 at the Austria Trend Parkhotel Schönbrunn in Vienna, Austria. The deadline for paper submission will be in spring 2026 (for details, please see the information on the website). In case of questions, please do not hesitate to contact us at info@neurois.org.

Young Academics

In each issue of the magazine, the NeuroIS Society presents a young and aspiring academic.

Bernhard Lutz

University of Vienna (Austria)

Why did you start NeuroIS research?

As someone who has always worked across disciplines, I enjoyed the idea of expanding my methodological horizon. What I particularly like about NeuroIS is its observational nature — it adds in-situ measurements of bodily responses to what we usually get from self-reports. That allows us to explore questions that traditional lab or online experiments simply cannot answer. I am especially intrigued by unconscious processes that influence how people interact with information technology. A nice side effect is that, once you start doing NeuroIS work, you automatically learn a lot about the human body — which I think is something that makes this field quite unique.

How did you start with NeuroIS?

It actually began in a rather unplanned way. In 2017, my PhD supervisor (Dirk Neumann) asked me, "Bernhard, do you want to travel to Australia?" I said yes — and that was the beginning. I was introduced to a joint research project with Marc Adam from the University of Newcastle. He had long-standing experience with NeuroIS experiments, whereas our team in Freiburg had basically none. We thus benefited tremendously from his expertise. Initially, the DAAD-funded project focused on how investors read financial news using eye-tracking. We quickly realized that students — our typical participant pool — do not process such news the same way professional portfolio managers do. Therefore, we shifted focus to real versus fake news, added ECG as another signal source, and prepared the study. Marc came to Freiburg in April/May 2018 and we ran the experiment together. After processing the raw signals, we presented an early version at the NeuroIS Retreat 2019. Since then, I have attended the retreat regularly, and NeuroIS has become a recurring part of my research. I plan to continue this line of work in my new position in Vienna, where the NeuroIS Retreat will just be just around the corner.

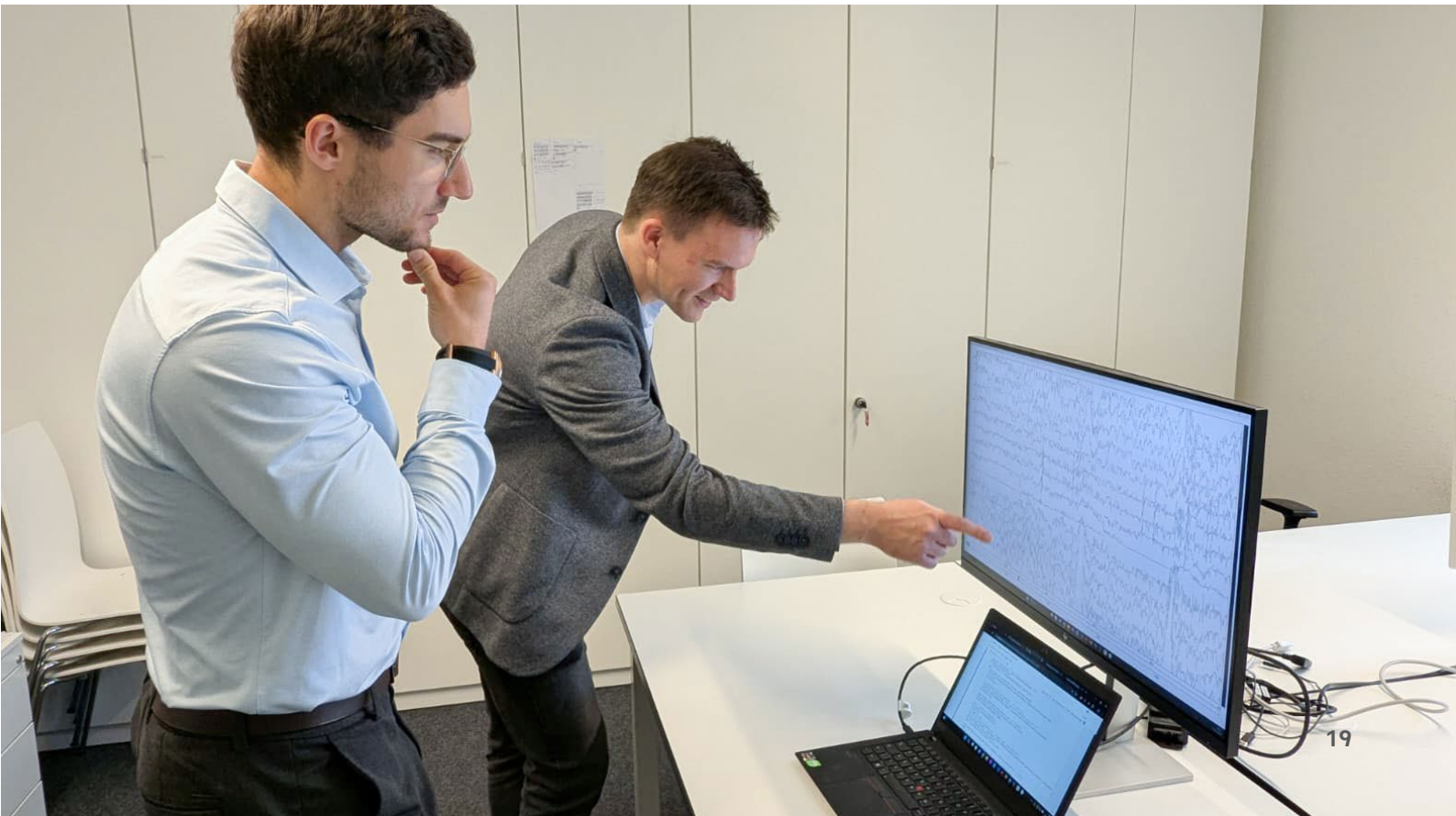
What are challenges for young NeuroIS researchers?

Besides getting comfortable with the devices and the data, I see two main challenges. First, NeuroIS studies are expensive and require a lot of time. You need to get ethics approval — which often involves several revision rounds — set up the lab, recruit participants, run sessions, and preprocess the raw data. If you only have one set of equipment, you test one participant at a time. In Freiburg, we typically managed to recruit 40–70 students per study, but show-up rates have been declining. Collecting a sufficient sample may easily take longer than a typical PhD funding period. Second, NeuroIS is a rather specialized field within IS and you need to convincingly justify why neurophysiological measures are necessary, especially when presenting to researchers outside the community. At the same time, I strongly believe that NeuroIS offers an important complementary perspective alongside the many online studies in the IS literature. The controlled lab setting with in-situ measurements allows us to answer different types of questions about the underlying bodily processes that drive human behavior.

What were the most important moments in your academic career?

For me, some of the best moments are still the mornings when an acceptance email for a journal article or a conference paper arrives. Realizing that others appreciate your work is incredibly rewarding. One particularly meaningful moment was the acceptance of my first NeuroIS paper — the project described above — at the European Journal of Information Systems.

Bernhard Lutz, University of Vienna (Austria)



Looking Back

On this last page, we look back to a highlight in the history of NeuroIS.

NeuroIS Meets Genetics

Genetics research plays a growing and essential role in the field of NeuroIS, which seeks to understand the neural, biological, and psychological foundations of how humans interact with digital technologies. The integration of genetic insights helps researchers uncover why individuals differ in their cognitive, emotional, and behavioral responses to digital environments—insights that traditional behavioral or neurophysiological data alone cannot fully explain.

A pioneering step in this direction was taken by Martin Reuter, Head of the Department of Differential & Biological Psychology, University of Bonn, Germany, who delivered a landmark keynote titled "Genetic Approaches to the Field of NeuroIS" at the NeuroIS Retreat 2011. Reuter's early advocacy for linking molecular genetics and information systems helped establish the foundation for this interdisciplinary research stream. Building on that vision, two influential MIS Quarterly publications, among other research initiatives and publications, have advanced our understanding of how genetic factors influence technology-related behavior. The first, "Is There a Genetic Basis for Information Search Propensity?" by Glenn J. Browne and Eric A. Walden (2020), provided empirical evidence that genetic variations are associated with individuals' tendencies to seek and process information online. The second, "The Fault in Our Stars: Molecular Genetics and Technology Adoption" by Susan A. Brown and Richard Sias (2023), demonstrated that genetic predispositions can shape how people adopt and use information technologies, emphasizing that our biological makeup partly determines our digital behavior.

Together, these studies illustrate how genetic markers influence neural and psychological processes central to decision-making, trust, and engagement in technological contexts. Integrating genetics with neuroscience and information systems allows for richer theoretical models that account for individual differences in behavior, moving the field toward more personalized, biologically informed system design. Looking ahead, genetics will continue to play a critical role in future NeuroIS research, especially as artificial intelligence (AI) systems become increasingly adaptive and user-centered. In this sense, genetics provides not only a window into the biological roots of user behavior but also a key pathway toward the next generation of intelligent, personalized technologies.

Many thanks to Martin Reuter, who, almost 15 years ago, explained the relevance of molecular genetic analyses for NeuroIS research in a legendary keynote speech at the NeuroIS Retreat, thereby paving the way for further research and future developments.

Keynote by Martin Reuter, NeuroIS Retreat 2011