PANEL #4

Porto
September 2023

NexTech 2023 & NetWare 2023

Theme

Challenges of AI-driven Computation and Data Analytics

CHAIR POSITION

The challenges discussed in this Panel underscore the complexity of the Artificial Intelligence (AI) approaches. Addressing these challenges requires a rounded undertaking that combines technical expertise, ethical considerations, and strategic planning.

CHAIR POSITION

During the past decade, data have become the new “gold” and enterprises are harnessing data power to drive insightful decision-making, optimize processes, and to gain a competitive edge. Artificial Intelligence (AI) has emerged as a pivotal tool in this data-driven transformation, revolutionizing the way enterprises analyze and interpret data. By 2026, the US AI market is projected to be worth over 300 billion US Dollars. AI driven data analytics holds the promise of uncovering valuable insights from massive datasets, but it is not without its challenges.

CHAIR POSITION

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Prof. Dr. Les Sztandera, Thomas Jefferson University, USA
Les.Sztandera@Jefferson.edu

The challenges discussed in this Panel underscore the complexity of AI endeavor. Addressing these challenges requires a rounded approach that combines technical expertise, ethical considerations, and strategic planning. As AI technologies continue to advance, enterprises that effectively navigate these challenges will be better positioned to leverage the full power of AI-driven data analytics and pave the way for a data-driven future.

CONTRIBUTORS

Moderator

Prof. Dr. Les Sztandera, Thomas Jefferson University - Philadelphia, USA

Panelists

Prof. Dr. Karsten Böhm, FH Kufstein Tirol Bildungs GmbH, Austria

Prof. Dr. Claudia Hess, IU International University of Applied Sciences, Germany

Prof. Dr. Erik Buchmann, Leipzig University, Germany

Panelist Position

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Claudia Hess
IU International University of Applied Sciences, Germany

AI-driven Computation and Data Analytics from an Ethical Perspective

- The challenge: Users and people affected by AI systems are ambivalent or unwilling to trust AI systems
  - People are highly skeptical about how safe and secure AI systems are.
  - If people do not trust the accuracy of an AI system's output, they will not use it.
- Developers and providers of AI systems need to take these concerns seriously!
- What can we do to increase user trust in AI systems?
  - Consider principles of trustworthy AI at all stages of an AI application's lifecycle.
  - Raise public awareness of ethical questions.
  - Upskill people to design and engage in responsible human-AI interactions.
  - Ensure that development teams are truly diverse to represent different perspectives.
  - Have AI applications certified by independent third parties to proof adherence to high ethical standards.
    ➔ We urgently need such standards and certifications!
  - Ensure that an AI system's recommendations and decisions are comprehensible to humans.

➔ ***This is very urgent as many companies are experimenting with AI, and AI systems are becoming more widely used!***

Panelist Position

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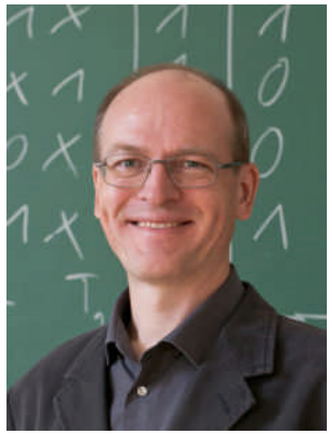

Erik Buchmann
Center for Scalable Data Analytics and Artificial Intelligence Dresden/Leipzig, Germany

AI-driven Computation and Data Analytics from a Security Perspective

- AI is *best effort*
  - Solves a computation/analytics problem that is too complex to be formalized
  - Uses training data which is too big to be comprehensible
  - The resulting model is too large to be exhaustively tested
- AI is based on *treacherous assumptions*
  - Unbiased, unmanipulated training data that is representative for future use cases
  - All important use cases can be exhaustively tested
- AI allows *dangerous modes of use*
  - AI model might used in unintended ways
  - Unclear liabilities, thus unclear responsibilities for errors
- AI has an *impact on its users*
  - Users might (dis)trust a superhuman AI not/too much and lose their own skills
  - What if no human-generated training data is available any more?

-> Analyze carefully what kind of problem you are solving with AI!

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Karsten Böhm
FH Kufstein Tirol

- **The Spaces of AI: Application space vs. Novelty Space**

  The usage of Generative AI is being divided into *two different spaces*: one that is mostly *focusing on the application of AI* in existing and well-known usage scenarios to improve efficiency or effectiveness (with limited innovation potential and a "thinking inside of the box"). Secondly, a space that *explores new ways of using AI* by humans playing & experimenting with the possibilities that the technology provides (with a high innovation potential and a "thinking outside of the box", but "limited visibility" on the outcomes)

- **Generative AI as a Co-evolutionary Pattern**

  GenAI is a *evolving technology* that has the *ability to adapt & learn* while being used, which is not a novelty per se, but disruptive in its innovation since it allows for the first time to a) communicate on a level that is close to human language communication, b) takes (large) context(s) into account and c) builds models from huge amounts of input. *GenAI will adapt to the use of the human user* and the *human user will also adapt and evolve with the technology* – with a mutual benefit for the development of both parties: *a co-evolutionary effect*