

CAIN 2022 Interactive Discussion Notes

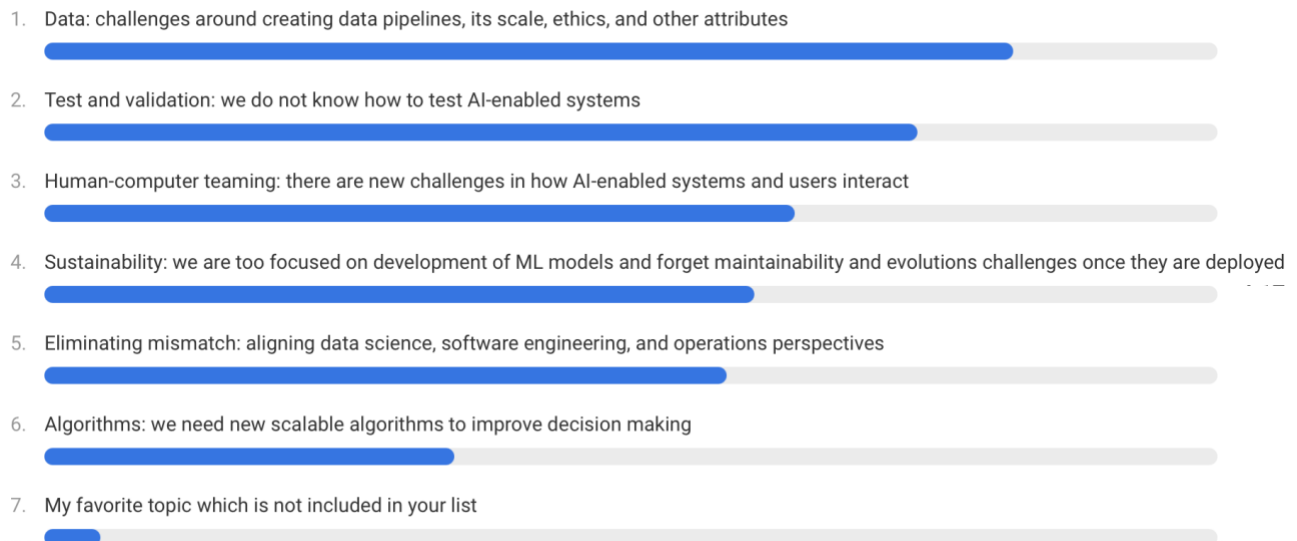
What are the top challenges in building AI-enabled systems?

- understanding how the system is working
- evolving non-AI systems to AI ones
- collaboration between different stakeholders
- testing & monitoring the AI components
- result validation
- overwhelming number of tools
- bridging the gap between local vs production systems
- performance of AI systems for real-time CPS.
- seamless integration of tools in ML pipelines
- trade-off between model accuracy vs performance of the components that consume AI models
- verification of functions
- testing models
- team members collaboration
- fairness
- debugging
- proof of correctness, safety
- reproducibility
- addressing NFRs - such as equity, fairness.
- getting access to data
- checking data quality
- lack of resources for data related tasks
- integration testing
- variety of tasks
- ensure quality and safety of the system
- making sure the data fits the needs
- data discovery
- understanding what data is needed and collecting appropriate training data.
- data management
- lack of data

What skill sets the role of an AI engineer/ML engineer in industry needs to include?



Research should focus on



Are AI engineering and Software Engineering for AI (SE4AI) two distinct fields with their corresponding practices?

- Yes, we both need AI engineering practices and SE4AI practices 63%
- No, it is all about software challenges 6%
- No, it is all about AI and data challenges 25%
- Not sure yet 6%

AI is driven by ...

- Data 78%
- Code 0%
- People 22%

We can verify correctness in systems without AI using today's tools and techniques, but it is not possible to verify AI-enabled systems...

- Yes 19%
- No 13%
- It depends 69%

We can manage hidden dependencies in systems without AI using today's tools and techniques, but it is not possible to manage hidden dependencies in AI-enabled systems...

- Yes 7%
- No 7%
- It depends 86%

It is possible to specify systems without AI using today's tools and techniques, but it is not possible to specify AI-enabled systems...

- Yes 13%
- No 25%
- It depends 63%