



GenAI and Software Engineering

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Two Categories of Topics: Already somewhat actionable

- Code correctness – how testing must change
- Compilation of experience reports in an organized way
- Addressing imminent loss of knowledge and expertise, preservation practices and support infrastructure
- Infrastructure – technical & community
- Trusted reference infrastructure for AI-assisted scientific software
- Reproducibility workflows for AI-assisted scientific software
 - archives, provenance, persistent identifiers, rebuildable environments
- Reference code corpora, traceability, and comparison with existing public code

Two Categories of Topics: too open for action but where we should be generating ideas

- Guardrails for the use of AI – where and where not
- What should become the means of interacting with agents – levels of programming languages and natural language
- How to teach algorithmic thinking in the presence of vibe coding
- How to persuade people with purse strings to invest in the urgently needed infrastructure and practices so as not to lose scientific credibility through unconsidered use of AI

Our Approach

- Two parallel sub-groups
- Prioritize the topic list
- For each selected topic
 - First 10 minutes everyone writes their thought in a shared document
 - Next 20 minutes we discuss
- Cycle through as many topics as possible
- Final hour formulate Outcomes

Expected Outcomes

- a short list of tasks for AI-assisted scientific software engineering
- a short list of infrastructure requirements for trustworthy and reproducible evaluation
- a proposal for one pilot on “Trusted AI for Scientific Software”
- identification of candidate institutions willing to contribute code corpora, expertise, or infrastructure