

Comments

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Automation...

- Crawling the literature (Feldman)
- Cyberphysical components (Cernak, McQueen)
- Long tail data discovery – Rich Context (Lane)
- Reproducibility, replicability (Nugent)
- Semi-automatic workflows ecosystem (Goble)
- Intelligent experiment design (Many)
- Active learning everywhere (Cranmer)
- Humanities ready - philology goes digital – Smart text(Crane)



Data...

- Research Data is a strategic asset (Burgelman)
- All about the questions, the data, their location, the data integration, more data integration, and communication (Nugent)
- Same data, different conclusions... (Stodden)
- Data Use Agreement templates (Plale)
- Sustainability over decades – “Smithsonian of data” (Szalay)
- Researchers spend 80% of their time cleaning data (Gardner)
- Biocompute Objects – all, from metadata to licensing (Mazumder)

AI...

- AI 3.0 – integrate math/physics/ bio/ symbolic with data (Vidal)
- Active learning works – from 2.5% to 57% (Murphy)
- Tool recommender from AI (Goble)
- Need to expose AI decisions (Plale)
- AI for science, some dramatic successes – 10^9 speedups (Fox)
- How do we make the data AI-ready? (Gardner)

AI and Computing...

- Jupyter – at the right place at the right time (Granger)
- Globus – amazing uptake – 120K users, 30K endpoints (Foster)
- The emerging computing continuum (Beckman)
- Bring clouds and supercomputers closer (Fox)
- From simulations to modeling: stability of inference workflows (Russell)
- Policy and tech challenges – unsolved problems (Weiner)
- AI use is independent and distributed, and its use can't be captured as workflow provenance (Plale)
- Workflows should be part of AI efforts (Kusnetsov)

Future

- From interactive exploration to semi-automated workflows
- Reproducibility, replicability and AI
- Active learning everywhere, used by experiments run by AI
- Data is a strategic asset
- AI 3.0 is coming
- Humanities ready
- Long term sustainability essential

Soundbytes...

- “Synthesis is an art” (Cernak)
- “How a p-value of 0.03 is really like swiping right on Tinder - not so much a lifelong commitment but more just a sign of interest...” (Nugent)
- “Everybody wants infrastructure but wants somebody else to pay for it” (Atkins)
- “Workflow making is still largely artisanal” (Goble)
- “Workflow is a layer on top of process” (Gardner)
- “Collective Brain vs the Lone Scientist” (Russell)