Sparkle: Accessible Meta-Algorithmics

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Sparkle

- Meta-algorithmics for everyone
  - Algorithm selection
  - Algorithm configuration

- Benchmarking - Fair comparison of
  - Target algorithms (like CSSC) [Hutter et al. 2017]
  - Meta-algorithms (like AClib) [Hutter et al. 2014]

- Competitions (e.g. SAT, planning) [Luo et al. 2018, 2019]

- Best practice and avoid pitfalls [e.g. Eggensperger et al. 2019]

Algorithm configuration

- Get better performance

- Used incorrectly
  - *"This doesn't work!"*
  - Wrong result (interpretation)

- Comparing algorithms
  - More can go wrong

- Comparing configurators
  - Even more can go wrong

AClib [Hutter et al 2014]

- Wrapper – Ensure algorithm calls are consistent across configurators
- Runsolver – Ensure runtime measurement is consistent
- Basic statistics and scatterplots (AClib 2)

Sparkle

- Report
  - Plots and statistics
  - What happens under the hood / practices used
- Integration with selection
- Just running target algorithms
- Analysis and validation tools
  - Integrated parameter importance analysis
  - Was the instance set homogeneous?

Sparkle

- Configuration and selection for everyone
- Benchmarking
  - Compare target- and meta-algorithms fairly
- Competitions (e.g. SAT, planning)
- Aid following best practice and avoiding pitfalls
- First release soon™ :)