# Sparkle: Towards Automated Algorithm Configuration for Everyone

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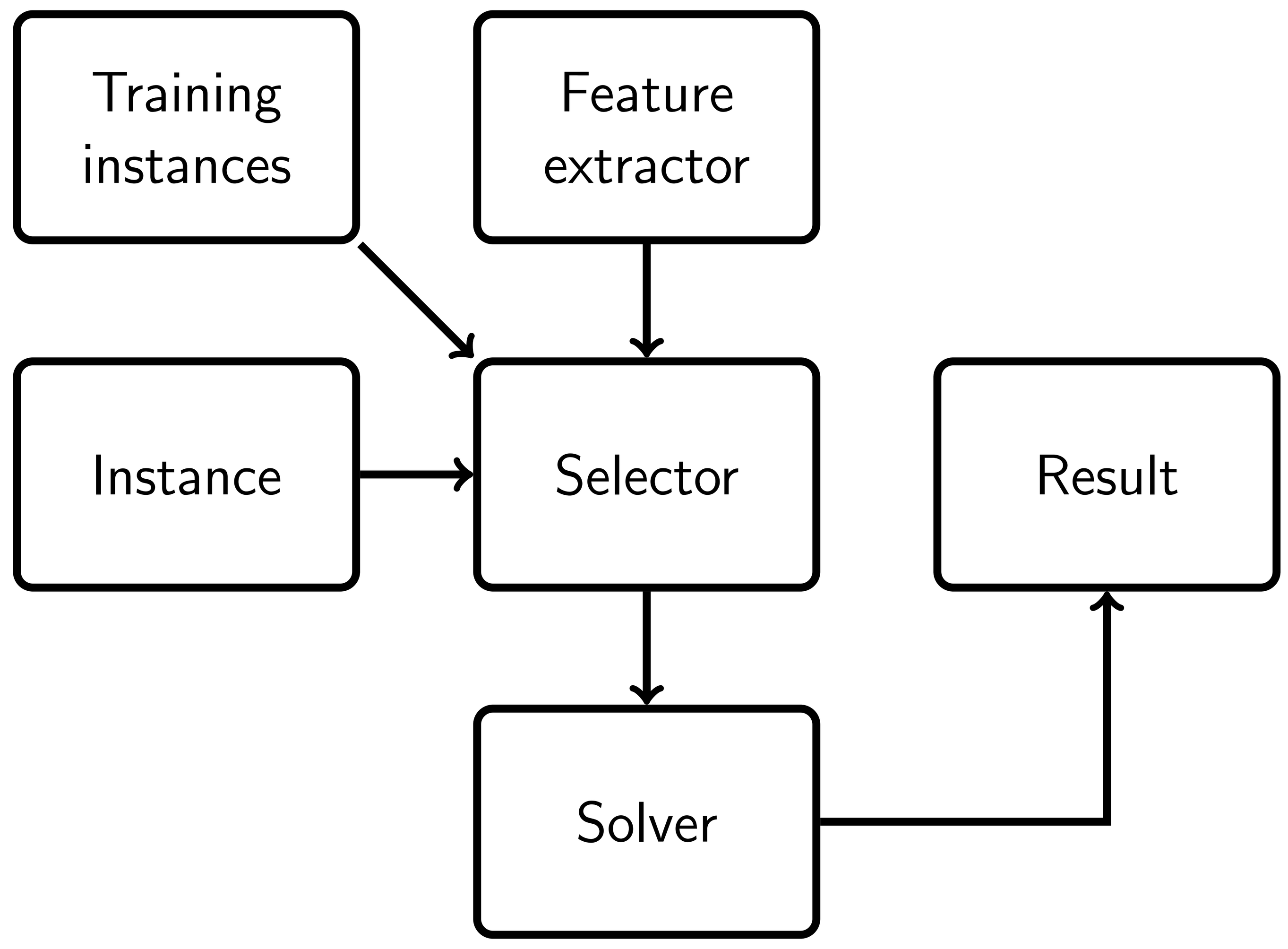
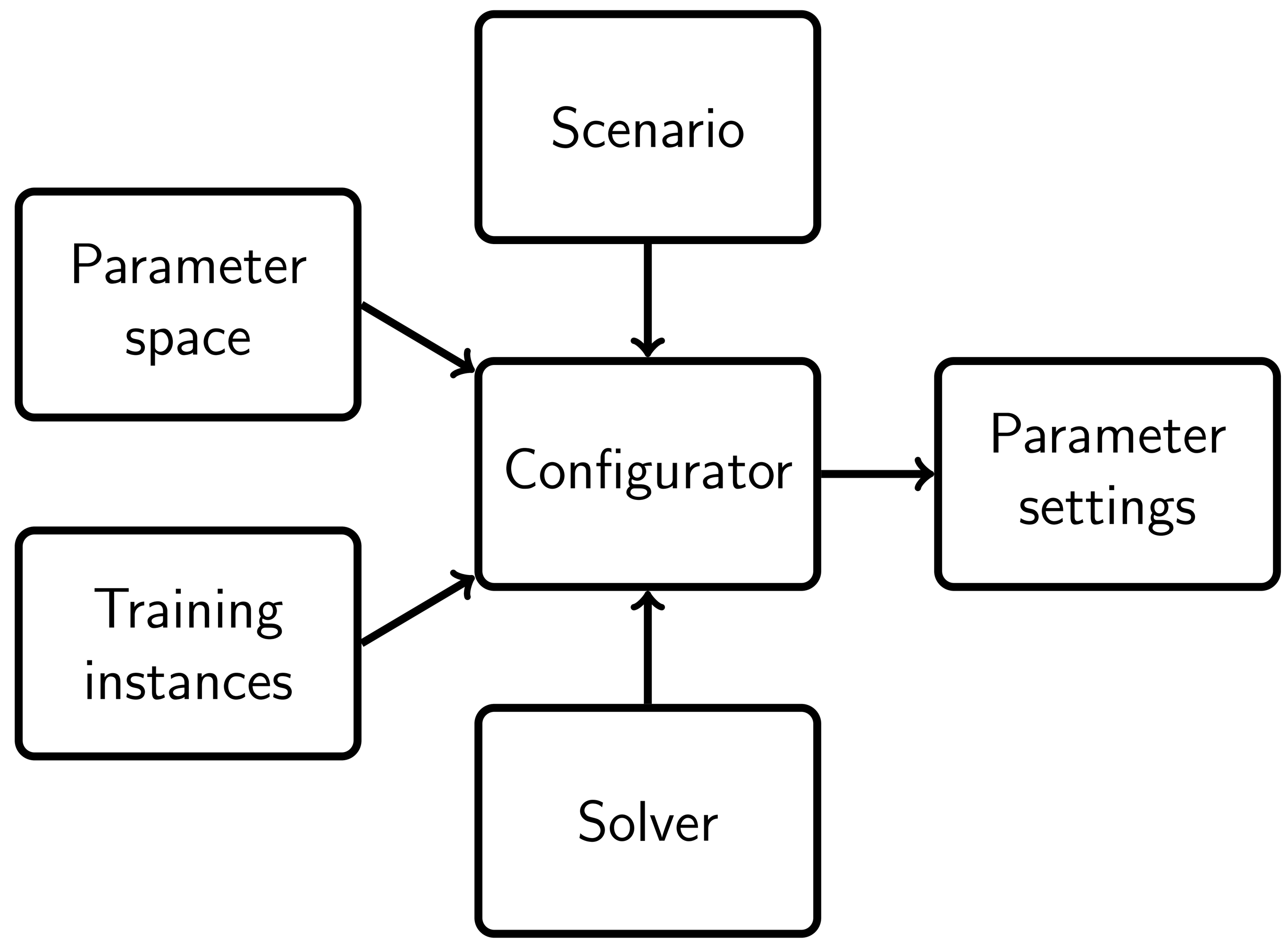
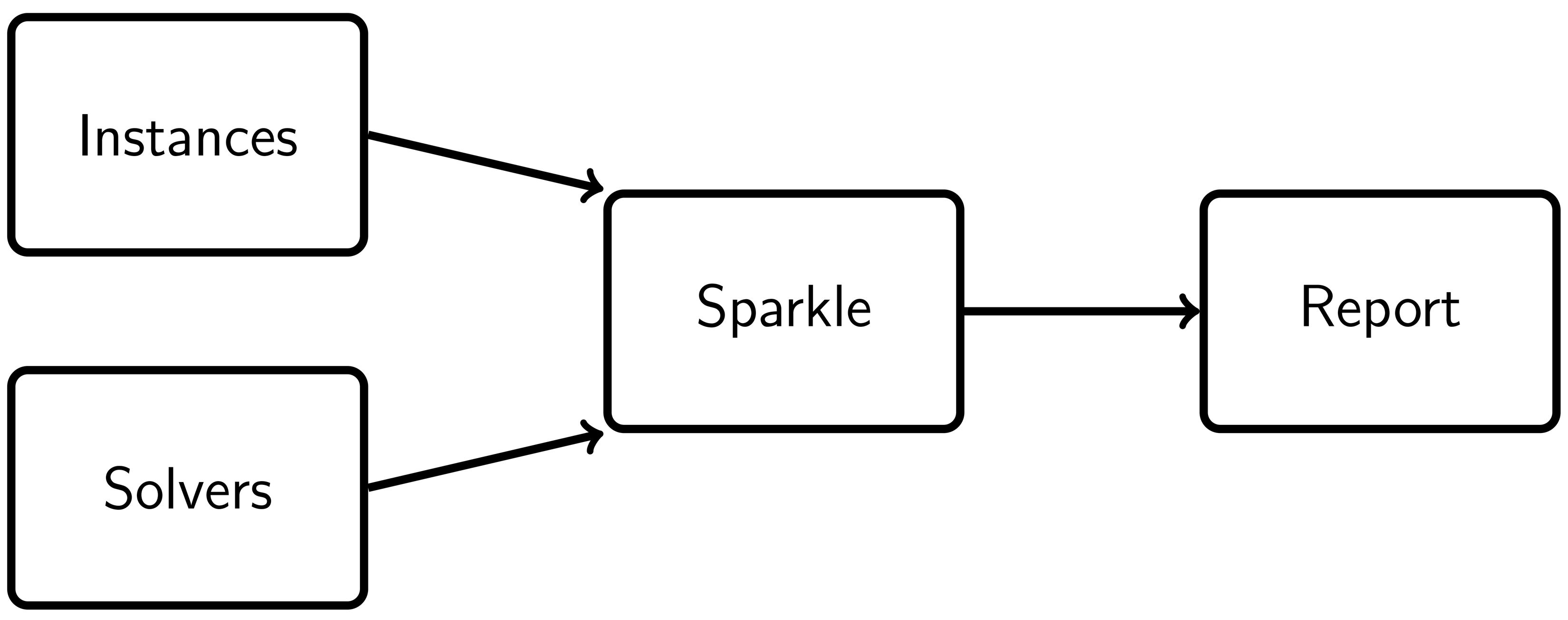
## Selection




## Configuration

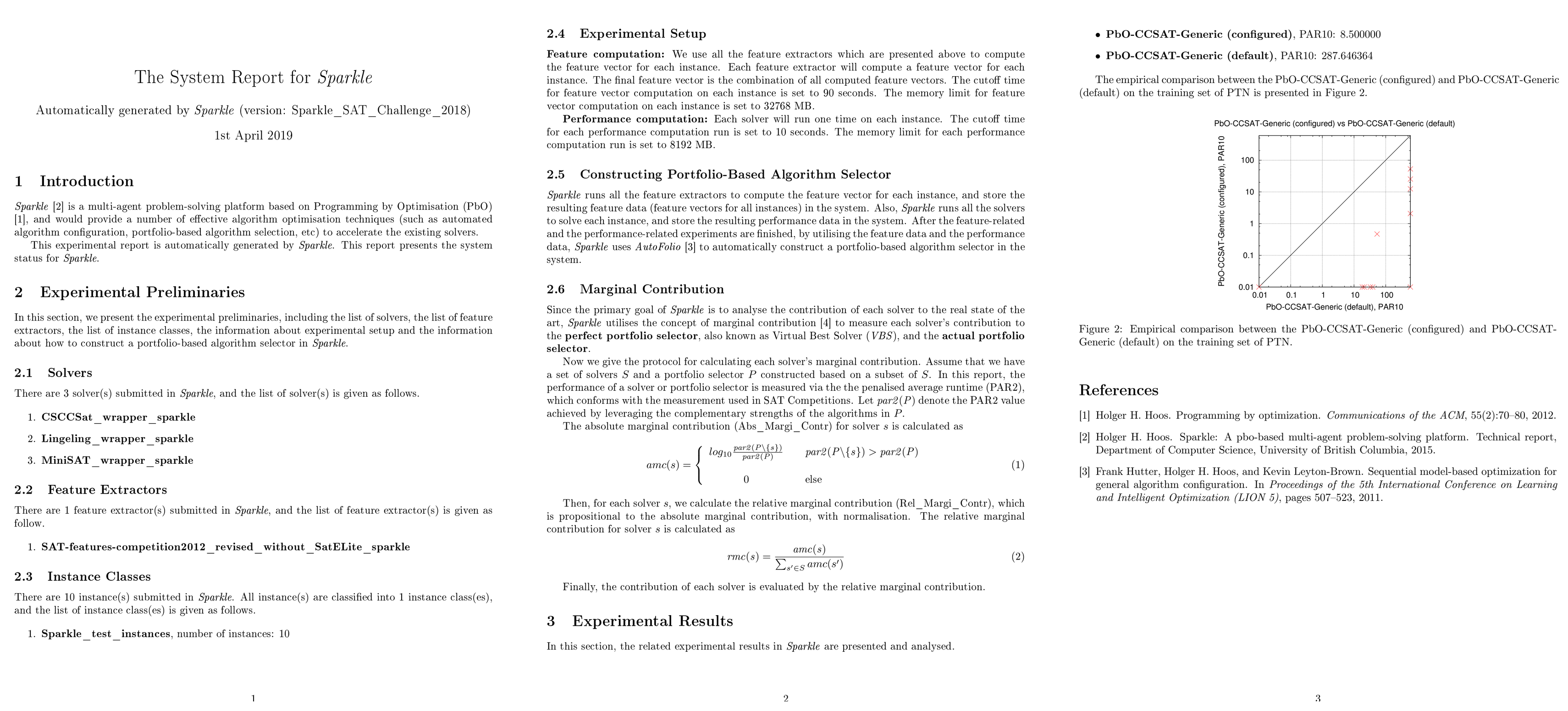



## Sparkle




- Make meta-algorithmics more accessible
- Operate with simple commands
- Integrated best practices and avoidance of pitfalls

## Reporting

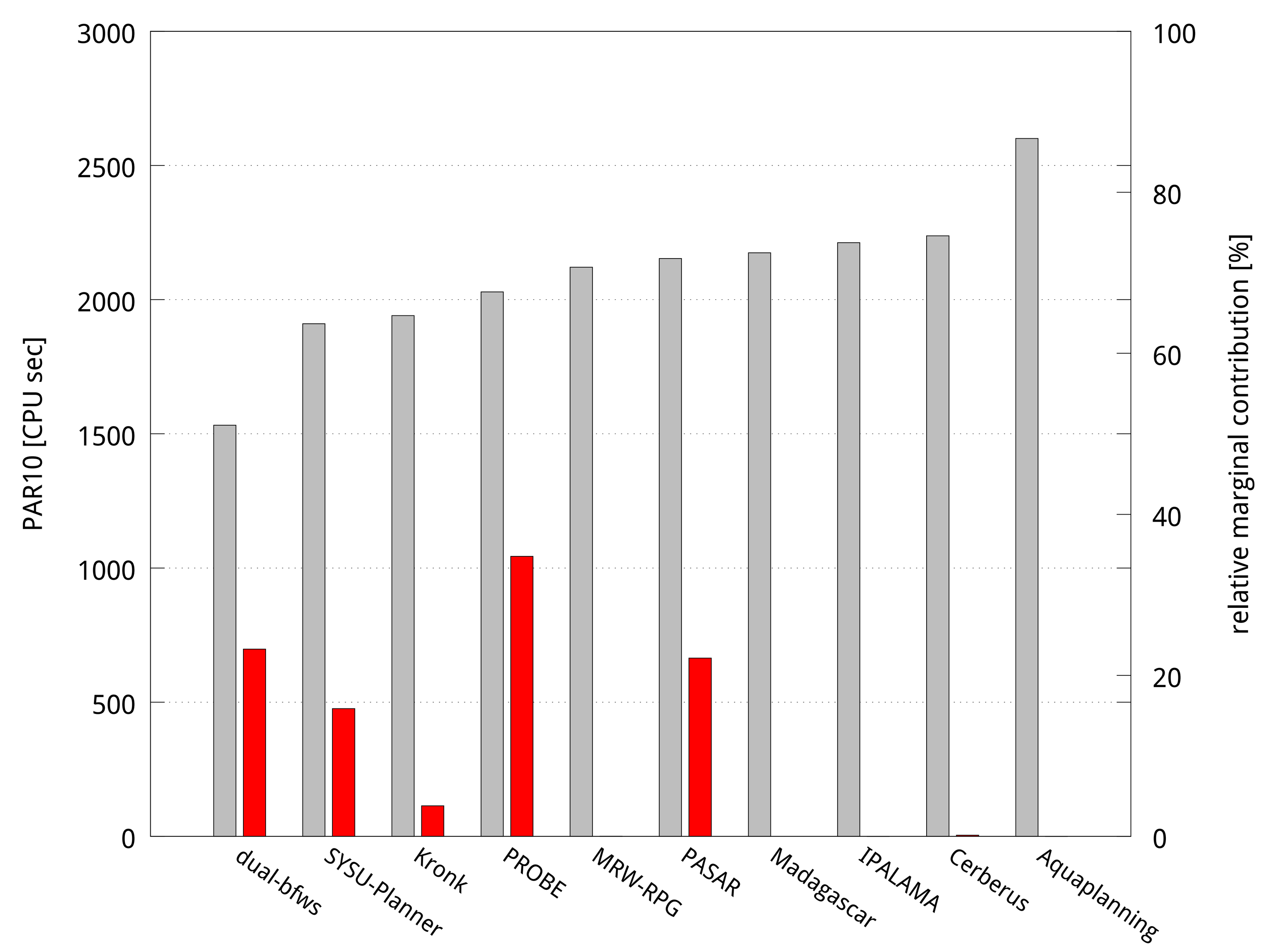



- Contribution per solver
- Cite configurator
- Cite selector
- Process description

## Simple commands

1: `Commands/initialise.py`
2: `Commands/add_instances.py -run-solver-later -run-extractor-later ../PTN/`
3: `Commands/add_solver.py -run-solver-later -deterministic 0 ../PbO-CSCCSAT-Generic/`
4: `Commands/add_feature_extractor.py -run-extractor-later ../SAT-features-competition2012/`
5: `Commands/compute_features.py`
6: `Commands/configure_solver.py -solver Solvers/PbO-CSCCSAT-Generic -instance_set Instances/PTN/`
7: `Commands/generate_report_for_configuration.py`

## Cooperative competition




- Marginal contribution [Xu et al 2012]: How valuable is this solver to the selector

## Future

- Further simplifications, such as inferring the parameter space
- Shapley value [Shapley 1953]?
- Your ideas?

## References

[1] Shapley, L. S. (1953). A value for n-person games. In Contributions to the Theory of Games, volume II, pages 307âĂŞ317. Princeton University Press.

[2] Xu, L., Hutter, F., Hoos, H. H., and Leyton-Brown, K. (2012). Evaluating component solver contributions to portfolio-based algorithm selectors. In Proceedings of the 15th International Conference on Theory and Applications of Satisfiability Testing (SAT 2012), LNCS 7317, pages 228âĂŞ241.