GASC 0.9

Geometry Automated Provers Systems Competition

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The Setup

Hardware

- Off-site (Mathematics Department, University of Coimbra)
- Intel(R) Core(TM) i7-4770 CPU @ 3.40 Ghz with 16 GiB RAM

Software

- GNU/Linux (Debian)
- Two shell scripts: `gasc2021run.sh` and `gasc2021results.sh`
- OGPCP tools

Specificity and Goals

Specificity of Geometry

- Specific sets of axioms for different geometries
- Specific methods and implementations
- Proofs produced maybe relevant

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GASC Goals

- Creation of a set of problems
- Creation of a common format
- Improve existing GATPs and create new ones
- Create a ranking of GATPs

Organization

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- Burocracy
- Discussions to solve problem
- Website (GitHub. . .)

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Competition Committe

- Deploy de competition

Rankings and Benchmarks

Rankings Every competition must have a winner...

- Problem: how to rank?
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Benchmark sets GATPs must have problems to solve

- Problem: how to assess if a set is adequate?
- Solution: problems from TGTP

Common Format

Allow problems to used in different contexts and by different tools

Solution: First Order Form used by CASC

- Pros:
  - Human-readable
  - Exists and is being used
  - TPTP has a considerable amount of geometry problems
- Cons:
  - Not XML (?!?)

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Problem: Is it adequate?

Competition Deployment and Other Problems

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- On-site vs. off-site?
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Other Problems

- How to formally check a proof? (e.g. Coq)
- How to guarantee the reproducibility of the result?
- How to achieve and measure the progress of the SotA?
- How to make the results and competing tools available so that they can be leveraged in subsequent events?

Conclusions and Future Work

Immediate future:

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GASC editions:

- 0.1 at ThEdu'19
- 0.2 for the post-proceedings of ThEdu'19
- 0.9 at ADG 2021
- 1.0 . . .

Obrigado / Gracias / Merci / Danke