ARGO Group Presentation

Predrag Janičić
Faculty of Mathematics, University of Belgrade

Workshop on Formal Theorem Proving
Belgrade, Serbia, Jan 29—Feb 01, 2008.

Web page: `http://www.matf.bg.ac.yu/~janicic/argo`

Seminar: `http://www.matf.bg.ac.yu/~vesnap/argo`

Main Areas of Interests

- Automated Theorem Proving (SAT/SMT)
  - ARGO-SAT, ARGO-lib
- Formalization of SAT/SMT solvers
- Using machine learning in SAT/SMT solving
- Geometry software and geometrical reasoning
  - GCLC

GCLC/WinGCLC

- Dynamic geometry tool
- Visualizing geometry (and not only geometry)
- Producing digital mathematical illustrations of high quality
- Use in mathematical education and as a research tool
- A construction is a formal procedure, not an image!
- Three built-in automated theorem provers

Simple Example

```
% fixed points
point A 15 20
point B 80 10
point C 70 90

% side bisectors
med a B C
med b A C
med c B A

% intersections of bisectors
intersection O_1 a b
intersection O_2 a c
```

```
% labelling points
cmark_lb A
cmark_rb B
cmark_rt C
cmark_lt O_1
cmark_rt O_2

% drawing the sides of the triangle ABC
drawsegment A B
drawsegment A C
drawsegment B C

% drawing the circumcircle of the triangle
drawcircle O_1 A

prove { identical O_1 O_2 }
```

Demo