Computational Geometry: Solving Hard Optimization Problems (CG:SHOP)

Optimization Challenge 2020

Erik D. Demaine, Sándor P. Fekete, Joseph S.B. Mitchell

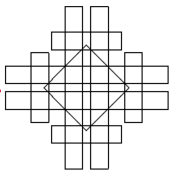**Dominik Krupke, Phillip Keldenich**

Contest

Important Dates

Contest opens: 18:00 CEDT (noon, EDT), September 30, 2019.

Contest closes: 24:00 (midnight, AoE), February 14, 2020.

Invitations for proceedings contributions: February 21, 2020.

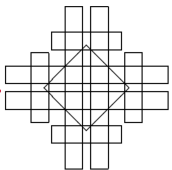**Final versions of proceedings contributions due:** March 31, 2020.

Position	Team	Score	# best solutions	# unique best solutions
1	Team UBC	175.172880	209	11
2	OMEGA	175.130597	297	126
3	CGA-Sbg	175.040207	187	0
4	Les Shadoks	174.695586	160	6
5	G-SCOP	174.543068	138	0
6	Min2Win@Zurich	174.384784	121	0
7	TUFUnky4you	173.973716	100	0
8	Team Technion	173.621857	99	0
9	Sapucaia, de Rezende, de Souza	170.939574	88	0
10	ucsbtheorylab	169.975180	76	0

Implementation

- Two PhD students/researchers and three student assistants at TU Braunschweig:
  - Phillip Keldenich and Dominik Krupke
  - Jan Grünke, Alexander Hill, Michael Perk
- Big Tasks:
  - Building a fast and exact verifier with useful messages
  - Allowing a quick start especially for students
  - Finding a flexible but simple team management
  - Providing progress feedback while allowing anonymity
  - Building a scalable system (last-day-peak)
  - Quickly finding and patching bugs as well as parallel development
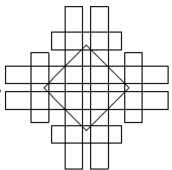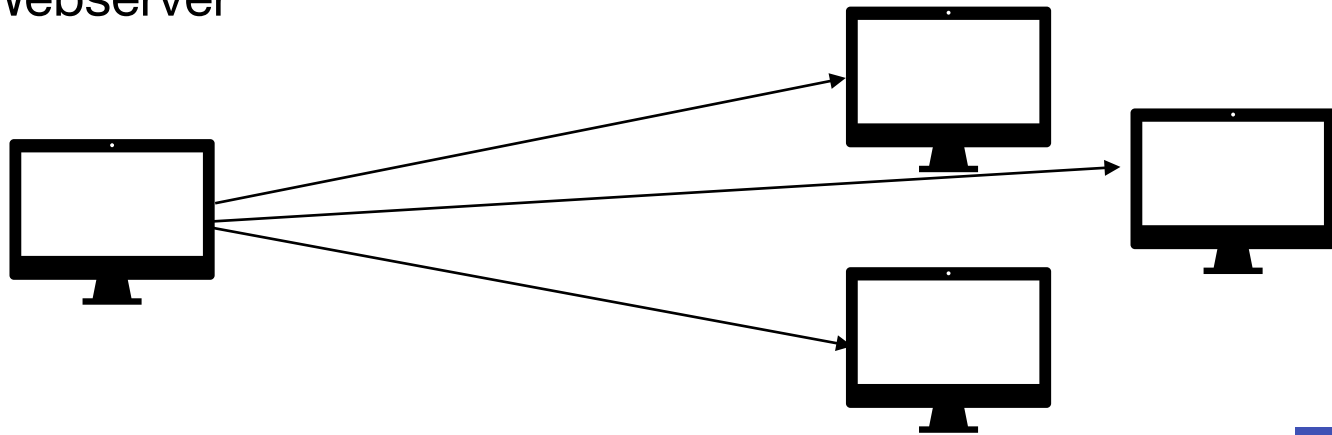 - Keeping all this running despite external strains

CG:SHOP

Architecture

Webserver

Verification-Worker

Future Plans

- Special issue of ACM JEA for 2019 is under way

- Special issue of ACM JEA for 2020 is planned

- Plans for Challenge 2021:
  - ‣ Yes
  - ‣ Establish Advisory Board
  - ‣ Bring in further colleagues

- June 2020: External funding to sustain infrastructure and maintenance secured!