

Dirk Beyer

PARTICIPANTS

Table 1: Competition candidates with tool references and representing jury members; **new** for first-time participants, \emptyset for hors-concours participation

Participant	Jury member	Affiliation
2LS	Viktor Malik	BUT, Brno, Czechia
BRICK	Lei Bu	Nanjing U., China
BUBAAK ^{new}	Marek Chalupa	ISTA, Austria
CBMC	Michael Tautschnig	Queen Mary U. London, UK
COASTAL \emptyset	(hors concours)	-
CPA-BAM-BNB \emptyset	(hors concours)	-
CPA-BAM-SMG \emptyset	(hors concours)	-
CPACHECKER	Henrik Wachowitz	LMU Munich, Germany
CPALOCKATOR \emptyset	(hors concours)	-
CRUX \emptyset	(hors concours)	-
CSEQ \emptyset	(hors concours)	-
CVT-ALGOSEL \emptyset	(hors concours)	-
CVT-PARPORT \emptyset	(hors concours)	-
DARTAGNAN	Hernán Ponce de León	Huawei Dresden, Germany
DEAGLE	Fei He	Tsinghua U., China
DIVINE \emptyset	(hors concours)	-
EBF	Fatimah Aljaafari	U. of Manchester, UK
ESBMC-INCR \emptyset	(hors concours)	-
ESBMC-KIND	Rafael Sá Menezes	U. of Manchester, UK
FRAMA-C-SV	Martin Spiessl	LMU Munich, Germany
GAZER-THETA \emptyset	(hors concours)	-
GDART	Falk Howar	TU Dortmund, Germany
GDART-LIVM ^{new}	Falk Howar	TU Dortmund, Germany
GOBLINT	Simmo Saan	U. of Tartu, Estonia
GRAVES-CPA	Will Leeson	U. of Virginia, USA
GRAVES-PAR ^{new}	Hors Concours	U. of Virginia, USA
INFER \emptyset	(hors concours)	-
JAVA-RANGER	Soha Hussein	U. of Minnesota, USA
JAYHORN \emptyset	(hors concours)	-
JBMC	Peter Schrammel	U. of Sussex / Diffblue, UK
JDART \emptyset	(hors concours)	-
KORN	Gidon Ernst	LMU Munich, Germany
LAZY-CSEQ \emptyset	(hors concours)	-
LF-CHECKER ^{new}	Tong Wu	U. of Manchester, UK
LOCKSMITH	Vesal Vojdani	U. of Tartu, Estonia
MLB ^{new}	Lei Bu	Nanjing U., China
MOPSA ^{new}	Raphaël Monat	Inria and U. of Lille, France
PESCO-CPA	Cedric Richter	U. of Oldenburg, Germany
PICHECKER ^{new}	Jie Su	Xidian U., China
PINAKA \emptyset	(hors concours)	-
PREDATORHP \emptyset	(hors concours)	-
SPF \emptyset	(hors concours)	-
SYMBIOTIC	Marek Trtik	Masaryk U., Brno, Czechia
THETA	Levente Bajcsi	BME Budapest, Hungary
UAUTOMIZER	Matthias Heizmann	U. of Freiburg, Germany
UGEMCUTTER	Dominik Klumpp	U. of Freiburg, Germany
UKOJAK	Frank Schüssele	U. of Freiburg, Germany
UTAIPAN	Daniel Dietsch	U. of Freiburg, Germany
VERIABS	Priyanka Darke	TCS, India
VERIABSL ^{new}	Priyanka Darke	TCS, India
VERIFUZZ	Raveendra Kumar M.	TCS, India
VERIOOVER ^{new}	HaiPeng Qu	Ocean U. of China, China

FEATURES

Table 2: Algorithms and techniques that the participating verification systems used; **new** for first-time participants, \emptyset for hors-concours participation

Verifier	CEGAR	Predicate Abstraction	Symbolic Execution	Bounded Model Checking	k-induction	Property-Directed Reach.	Explicit-Value Analysis	Numeric. Interval Analysis	Shape Analysis	Separation Logic	Bit-Precise Analysis	ARC-Based Analysis	Lazy Abstraction	Interpolation	Automata-Based Analysis	Concurrency Support	Ranking Functions	Evolutionary Algorithms	Algorithm Selection	Portfolio
2LS																				
BRICK																				
BUBAAK ^{new}																				
CBMC																				
COASTAL \emptyset																				
CPA-BAM-BNB \emptyset																				
CPA-BAM-SMG \emptyset																				
CPACHECKER																				
CPALOCKATOR \emptyset																				
CRUX \emptyset																				
CSEQ \emptyset																				
CVT-ALGOSEL \emptyset																				
CVT-PARPORT \emptyset																				
DARTAGNAN																				
DEAGLE																				
DIVINE \emptyset																				
EBF																				
ESBMC-INCR \emptyset																				
ESBMC-KIND																				
FRAMA-C-SV																				
GAZER-THETA \emptyset																				
GDART																				
GDART-LIVM ^{new}																				
GOBLINT																				
GRAVES-CPA																				
GRAVES-PAR ^{new}																				
INFER \emptyset																				
JAVA-RANGER																				
JAYHORN \emptyset																				
JBMC																				
JDART \emptyset																				
KORN																				
LAZY-CSEQ \emptyset																				
LF-CHECKER ^{new}																				
LOCKSMITH																				
MLB ^{new}																				
MOPSA ^{new}																				
PESCO-CPA																				
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SYMBIOTIC																				
THETA																				
UAUTOMIZER																				
UGEMCUTTER																				
UKOJAK																				
UTAIPAN																				
VERIABS																				
VERIABSL ^{new}																				
VERIFUZZ																				
VERIOOVER ^{new}																				

FRAMEWORKS

Table 3: Solver libraries and frameworks that are used as components in the participating verification systems; **new** for first-time participants, \emptyset for hors-concours participation

Verifier	CPACHECKER	CTPROVER	ESBMC	JPF	ULTIMATE	JAWSMIT	MATHEMAT	CVC4	SVTINTERPOL	Z3	MINISAT	ATHOS
2LS												
BRICK												
BUBAAK ^{new}												
CBMC												
COASTAL \emptyset												
CPA-BAM-BNB \emptyset												
CPA-BAM-SMG \emptyset												
CPACHECKER												
CPALOCKATOR \emptyset												
CRUX \emptyset												
CSEQ \emptyset												
CVT-ALGOSEL \emptyset												
CVT-PARPORT \emptyset												
DARTAGNAN												
DEAGLE												
DIVINE \emptyset												
EBF												
ESBMC-INCR \emptyset												
ESBMC-KIND												
FRAMA-C-SV												
GAZER-THETA \emptyset												
GDART												
GDART-LIVM ^{new}												
GOBLINT												
GRAVES-CPA												
GRAVES-PAR ^{new}												
INFER \emptyset												
JAVA-RANGER												
JAYHORN \emptyset												
JBMC												
JDART \emptyset												
KORN												
LAZY-CSEQ \emptyset												
LF-CHECKER ^{new}												
LOCKSMITH												
MLB ^{new}												
MOPSA ^{new}												
PESCO-CPA												
PICHECKER ^{new}												
PINAKA \emptyset												
PREDATORHP \emptyset												
SPF \emptyset												
SYMBIOTIC												
THETA												
UAUTOMIZER												
UGEMCUTTER												
UKOJAK												
UTAIPAN												
VERIABS												
VERIABSL ^{new}												
VERIFUZZ												
VERIOOVER ^{new}												

MORE INFORMATION



<https://sv-comp.sosy-lab.org/2023/>

Reference

D. Beyer. Competition on software verification and witness validation: SV-COMP 2023. In *Proc. TACAS (2)*, LNCS 13994. Springer, 2023

SCORE SCHEMA

Table 6: Scoring schema for SV-COMP 2023 (unchanged from 2021)

Reported result	Points	Description
UNKNOWN	0	Failure to compute verification result
FALSE correct	+1	Violation of property in program was correctly found and a validator confirmed the result based on a witness
FALSE incorrect	-16	Violation reported but property holds (false alarm)
TRUE correct	+2	Program correctly reported to satisfy property and a validator confirmed the result based on a witness
TRUE incorrect	-32	Incorrect program reported as correct (wrong proof)

CUMMULATIVE SCORE

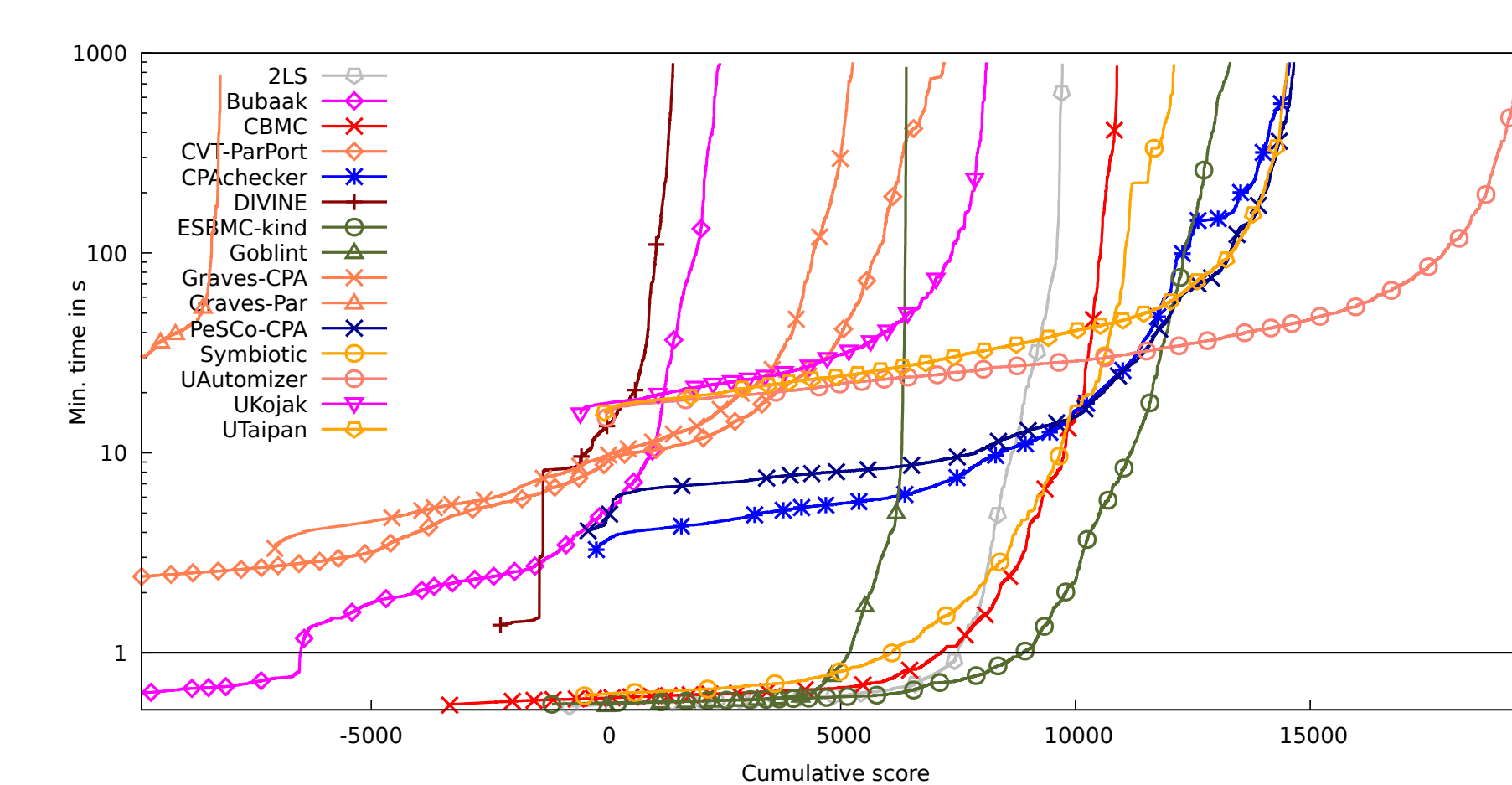


Figure 1: Quantile functions for category C-Overall.

RESULTS

Table 4: Quantitative overview over all regular results; empty cells are used for opt-outs, **new** for first-time participants, \emptyset for hors-concours participation

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