

Dagstuhl Seminar 19431

Theory of Randomized Optimization Heuristics

Seminar schedule

Monday, 21 October 2019 – Lecture Hall Karlsruhe

– 09:00	Breakfast
09:00 – 09:15	Welcome and seminar opening
09:15 – 10:00	Participant introduction I
10:00 – 10:30	Coffee break
10:30 – 11:00	Carsten Witt on <i>What's Hot in EA Theory I</i>
11:00 – 11:20	Benjamin Doerr on <i>Genetic Drift in EDAs</i>
11:20 – 12:00	Participant introduction II
12:15 – 13:30	Lunch
13:30 – 14:30	Time for individual discussions
14:30 – 15:00	Luc Pronzato on <i>Dynamical Search</i>
15:00 – 15:20	Participant introduction III
15:20 – 15:30	Short announcement re. group work
15:30 – 16:00	Cake
16:00 – 16:15	Organization of group work
16:15 – 17:15	Breakout sessions Teaching Measuring performance in an invariant way for comparison
17:15 – 17:45	Participant introduction IV
17:45 – 18:00	Debrief from the breakout sessions
18:00 – 19:00	Dinner
19:30 –	Opening of the art exhibit “Lost Places” by the German artist Winfried Groke (in the new building, next to the reception, more information)
19:30 –	Individual discussions (and sleep ;-)

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Tuesday, 22 October 2019 – Lecture Hall Karlsruhe

– 09:00	Breakfast
09:00 – 09:20	Johannes Lengler on <i>Dynamic linear functions</i>
09:20 – 09:40	Vida Vukašinović on <i>Analysis of artificial genetic representations with neutrality</i>
09:40 – 10:00	Olivier Teytaud on <i>Single-iteration evolutionary computation, also known as fully parallel derivative-free optimization</i>
10:00 – 10:30	Coffee break
10:30 – 11:00	Pietro Oliveto on <i>What's hot in EA theory II</i>
11:00 – 11:30	Vivek Borkar on <i>Overview of stochastic approximation and related schemes</i>
11:30 – 12:00	Youhei Akimoto on <i>Expected runtime bounds for $(1 + 1)$-ES</i>
12:15 – 13:30	Lunch
13:30 – 14:00	Time for individual discussions
14:00 – 14:30	Organization of group work
14:30 – 15:30	Breakout sessions Neutral representations IGO/Stochastic optimization Multi-objective optimization Dynamic linear functions
15:30 – 16:00	Cake
16:00 – 16:10	Flash talk: Günter Rudolph on <i>Runtime in integer space under multiple objectives</i>
16:10 – 17:30	Breakout sessions Drift analysis Benchmarking and competitions
17:30 – 18:00	Debrief and announcements
18:00 – 19:00	Dinner
19:00 –	Individual discussions (and sleep ;-)

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Wednesday, 23 October 2019 – Lecture Hall Karlsruhe

– 09:00	Breakfast
09:00 – 09:20	Patrick Spettel on <i>Analysis of evolution strategies applied to a more general conically constrained problem</i>
09:20 – 09:40	Anne Auger on <i>A unified invariance formalism for discrete and continuous optimization</i>
09:40 – 10:00	Niko Hansen on <i>A (general) definition of invariance</i>
10:00 – 10:30	Coffee break
10:30 – 10:50	Anatoly Zhigljavsky on <i>Stochastic global optimization (SGO)</i>
10:50 – 11:10	Martin Krejca on <i>The UMDA on LeadingOnes revisited</i>
11:10 – 11:30	Dirk Sudholt on <i>Runtime analysis of diversity mechanisms – recent results</i>
11:30 – 12:00	Organization of group work
12:15 – 13:30	Lunch
13:30 – 15:30	Hike
15:30 – 16:00	Cake
16:00 – 18:00	Breakout session Algorithm configuration and selection
18:00 – 19:00	Dinner
19:00 –	Individual discussions (and sleep ;-)

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Thursday, 24 October 2019 – Lecture Hall Karlsruhe

– 09:00	Breakfast
09:00 – 09:20	Francisco Chicano on <i>Dynastic potential crossover</i>
09:20 – 09:40	Denis Antipov on <i>Precise analysis for plateaus</i>
09:40 – 10:00	Hans-Georg Beyer on <i>Evolution strategies are NOT gradient followers</i>
10:00 – 10:10	Group picture (please make sure to be around!)
10:10 – 10:40	Coffee break
10:40 – 11:00	Maxim Buzdalov on <i>Variations on the theme of the $(1 + (\lambda, \lambda))$ GA</i>
11:00 – 11:20	Per Kristian Lehre on <i>Runtime analysis of self-adaptive EAs</i>
11:20 – 11:40	Anton Eremeev on <i>On potential for transfer of results from theory of evolutionary algorithms to biology</i>
11:40 – 12:00	Jon Rowe on <i>Open questions relating to noisy OneMax</i>
12:15 – 13:30	Lunch
13:30 – 14:30	Time for individual discussions In parallel: Discussion on benchmarking
14:30 – 15:30	Breakout sessions Permutation-based problems (Christine), room S104 The purpose of theory research (Timo), room S106 Benchmarking survey (Thomas Bartz-Beielstein), coffee room Invariance (Niko, Anne), initial meeting in plenary room
15:30 – 16:00	Cake
16:00 – 17:30	Breakout sessions Mixed-integer optimization (Thomas Bäck), coffee room Open problems (Benjamin and Frank), plenary room One-shot optimization (Olivier), room S003, close to the coffee room
17:30 – 18:00	Debrief from breakout sessions
18:00 – 19:00	Dinner
19:00 – 19:30	Jon Rowe on <i>Work at the Alan Turing Institute on “The Data Science Revolution in Scientific Research”</i>
19:30 – 20:30	Individual discussions
20:30 –	Wine & cheese party

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Friday, 25 October 2019 – Lecture Hall Karlsruhe

– 09:00	Breakfast
09:20 – 09:40	Manuel López-Ibáñez on <i>Automated algorithm configuration and selection for theoreticians</i>
09:40 – 10:00	Andrew Sutton on <i>On the linkage equilibria of weakly-selective steady-state GAs</i>
10:00 – 10:10	Dirk Thierens on <i>Optimal mixing evolutionary algorithms</i>
10:10 - 10:30	Coffee break
10:30 – 10:40	Arina Buzdalova on <i>Challenges of mutation rate control in $(1 + \lambda)$ EA</i>
10:40 – 11:00	Niko Hansen on <i>Gradient descent and evolution strategies are almost the same</i>
11:00 – 11:20	Alexandre Chotard on <i>Adaptation of a sampling distribution for Metropolis-Hastings</i>
11:20 – 12:00	Closing session, feedback, and goodbye
12:15 - 13:30	Lunch
13:30 –	Individual departures (please sign up for shuttles to the train station with the staff at the reception)
