Oberseminar Theoretische Informatik
Wintersemester 2007/2008

Nadja Betzler

Parameterized Computational Complexity of Dodgson and Young Elections

Mo, 12.11.2007 um 14 Uhr (c.t.) im SR 3319 (Ernst-Abbe-Platz 2, 3. Stock).

We show that, other than for standard complexity theory, the computational (in)tractability of the classic Dodgson and Young election systems behaves very differently from a parameterized complexity point of view. That is, on the one hand, we present an efficient fixed-parameter algorithm for determining a Condorcet winner in Dodgson elections by a minimum number of switches in the votes. On the other hand, we prove that the corresponding problem for Young elections, where one has to delete votes instead of performing switches, is W[2]-complete. In addition, we study Dodgson elections that allow ties between the candidates and give fixed-parameter tractability as well as W[2]-hardness results depending on the cost model for switching ties.

Internetseite der Veranstaltung:
`http://theinf1.informatik.uni-jena.de/teaching/ws0708/oberseminar-ws0708`