

Title: Map of Elections: The Story So Far

Abstract: Computational social choice has started off by focusing on theoretical studies, but more and more researchers include experimental analyses or focus on purely experimental research. In this talk we will focus on the problem of selecting data for such experiments, focus on elections and voting. Specifically, we will present the idea of a "map of elections". The idea of this map is to gather as diverse a set of elections as possible and arrange them visually in some meaningful way. To this end, we define a distance between elections, generate elections from a number of different distributions, compute the distances between these elections and seek an embedding of the elections as point on a plane. We would like the distances between the points on the plane to be as similar to those between corresponding elections as possible. We will show that while some very natural distances between elections are NP-hard to compute, some simpler ones seem to lead to sufficiently informative maps. We will also show that our embeddings of elections on the plane are of fairly high quality.

The talk is based on joint work with: Niclas Boehmer, Robert Bredereck, Edith Elkind, Rolf Niedermeier, Arkadii Slinko, Krzysztof Sornat, Stanislaw Szufa, Nimrod Talmon, Tomasz Was