

## 1: Theory Lunch Seminar | Carnegie Mellon University - Computer Science Department

*Hypergraph Seminar Ohio State University Editors; Claude Berge; Finite Graph Graph theory Hypergraph Matching Morphism extrema geometry graphs minimum theorem.*

This seminar series covers many of the research areas in the Department: We will define basic fairness concepts such as proportionality and envy-freeness and will discuss their properties. Next, we will focus on allocations of maximum Nash welfare, and we will explain how they guarantee approximate notions of envy-freeness. Finally, we will define new fairness concepts that are related to the level of awareness of the agents for the allocation and to their social relations. We will present examples and many open problems.

Quasi-polynomial bounds for parity games Several distinct techniques have been proposed to solve parity games in quasi-polynomial time since the breakthrough result of Calude, Jain, Khousainov, Li, and Stephan. We argue that all those techniques can be viewed as instances of the separation approach to solving parity games a key component of which is constructing an automaton that separates languages of words encoding plays that are decisively won by either of the two players thus establishing a single model that unifies the recent approaches to solving parity games efficiently. Our main technical results are the nearly matching quasi-polynomial upper and lower bounds on the sizes of all separating automata. In particular, the lower bound forms a barrier that the existing approaches must overcome in the ongoing quest for a polynomial-time algorithm for solving parity games. We obtain our main results by introducing and studying universal ordered trees, a combinatorial object that may be of independent interest. Firstly, we establish the nearly matching quasi-polynomial upper and lower bounds on the size of smallest universal trees. Then we prove that the sizes of the smallest separating automata and of the smallest universal trees coincide and hence both are quasi-polynomial by showing how to turn universal trees into separating automata, and that there is a universal tree hiding in the states of every separating automaton. For any given hypergraph  $H$  the main question is to determine the smallest bias  $q(H)$  that allows Breaker to force that Maker ends up with an independent set of  $H$ . This will enable us to derive a hypergraph generalization of the H-building games, studied for graphs by Bednarska and Luczak. Furthermore, we investigate the biased version of generalizations of the van der Waerden games introduced by Beck. We refer to these generalizations as Rado games and determine their threshold bias up to constant factors by applying our general criteria. We find it quite remarkable that a purely game theoretic deterministic approach provides the right order of magnitude for such a wide variety of hypergraphs, when the generalizations to hypergraphs in the analogous setup of sparse random discrete structures are usually quite challenging. In a single step the first  $b$  still unprocessed items from the sequence are accessible, and a scheduling strategy has to select an item and a server. Then the chosen item is processed by moving the chosen server to its location. The goal is to process all items while minimizing the total distance travelled by the servers. This problem was introduced by Chan et al. The problem is a natural generalization of two very well-studied problems: We consider the GRBM problem on a uniform metric in the online version. This is a significant improvement in the dependency on  $b$  compared to the previous best bound of  $O(\sqrt{b \log k})$ , and is asymptotically optimal for constant  $k$ . In this talk, I will outline the ideas and techniques used in the proof. I will also discuss some new results on the number of maximal sum-free sets in abelian groups, which are joint work with Hong Liu. The counter-example we give is motivated by related questions in group theory, and is rather different from the usual examples in arithmetic combinatorics. For arbitrary  $k$ , the best-known approximation factor is 1. In this talk we show how to improve on the lower bound by constructing an integrality gap instance for the CKR relaxation. A technical challenge in improving the gap has been the lack of geometric tools to understand higher-dimensional simplices. We analyze the gap of the instance by viewing it as a convex combination of 2-dimensional instances and a uniform 3-dimensional instance. The problem of proportional cake cutting focuses on dividing a heterogeneous and divisible resource, the cake, among  $n$  players who value pieces according to their own measure function. The goal is to assign each player a not necessarily connected part of the cake that the player evaluates at least as much as her proportional share. We investigate the problem of proportional division with

unequal shares, where each player is entitled to receive a predetermined portion of the cake. Our main contribution is threefold. First we present a protocol for integer demands that delivers a proportional solution in fewer queries than all known algorithms. Then we show that our protocol is asymptotically the fastest possible by giving a matching lower bound. Finally, we turn to irrational demands and solve the proportional cake cutting problem by reducing it to the same problem with integer demands only. All results remain valid in a highly general cake cutting model, which can be of independent interest. The paper received the best paper award at SAGT. The third is the chromatic number of  $G$ , denoted  $\chi(G)$ . We discuss a conjecture which states that  $\chi(G)$  lies in the lower half of this range. Hierarchical clustering has mostly been studied in procedural terms, i. Dasgupta identified this as a reason why the theory of hierarchical clustering lagged behind that of flat clustering and proposed an objective function. In this talk, we will take an axiomatic approach to identifying suitable objective functions for hierarchical clustering. We will also describe a new random-graph model with a planted hierarchy. New and existing algorithms and their performance in theory and on some preliminary experiments will be discussed. The proposed decomposition differs from previous decomposition results on matroids that have appeared in the literature in the sense that it is not solely based on  $k$ -sums such as the decomposition of regular matroids, but also on an operation called star composition. A sketch of the resulting recognition algorithms as well as an excluded minor characterization of the building blocks of the aforementioned decomposition will also be presented. It is a combination of two previous seminar series: Seminar on Discrete Mathematics and Game Theory:

## 2: February Archives | The n-Category Café

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## 3: Hypergraph Seminar | Oxfam GB | Oxfam's Online Shop

*In mathematics, a hypergraph is a generalization of a graph in which an edge can join any number of vertices. Formally, a hypergraph is a pair  $(H, E)$  where  $H$  is a set of elements called nodes or vertices, and  $E$  is a set of non-empty subsets of  $H$  called hyperedges or edges.*

## 4: CiteSeerX Citation Query Aspects of the theory of hypermatroids, in Hypergraph Seminar

*Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.*

## 5: Theory Lunch Seminar | Carnegie Mellon School of Computer Science

*Seminars NP-hardness of Coloring 2-Colorable Hypergraph with Poly-logarithmically Many Colors The best known polynomial time algorithms to color a 2-colorable hypergraph require a polynomial (in the number of vertices) number of colors.*

## 6: how to filter curves in hypergraph

*Quelques problèmes concernant les cliques des hypergraphes  $h$ -complets et  $q$ -parti  $h$ -complets. Meyer, J. C. Pages*

## 7: Hypergraph - Wikipedia

*Hypergraph Seminar by Claude Berge starting at \$ Hypergraph Seminar has 1 available editions to buy at Alibris.*

### 8: Hypergraph - Infogalactic: the planetary knowledge core

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### 9: Hypergraph - Wikipedia

*guest post by Jonathan Lorand and Fabrizio Genovese. In the Applied Category Theory Seminar, we most recently read Brendan Fong's article on decorated [www.enganchecubano.com](http://www.enganchecubano.com) construction is part of a larger framework, developed in Brendan Fong's PhD thesis, for studying interconnected, open, network-style systems.*

*Death penalty does not discriminate against racial minorities John Perazzo Police Sergeant Examination Preparation Guide With Lines; and by what Tokens we may know the 2000 Years Since Bethlehem Financially managing the one-person business Rationality and tribal thought Theology from the perspective of a living adept by Herbert D. Long Shrek the Halls Lift the Flap Book (Shrek) Hotel duty manager checklist The British Crime Survey (A Scottish Office Social Research Study) The Complete Slayer A Tale of Two Frogs (Story Cove Teacher Activity Pack) Quests of the Dawn (Grails) Pt. IX. The Duke of Roxburghe. Henry Thomas Buckle. Michael Wodhull. George Baker. N.P. Simes. 1897. Three Little Daughters of the Revolution The myth of wondrous water crystals The enviromental impact handbook Seminar on High Speed Road Corridors, Vigyan Bhawan, New Delhi, 23-24 September, 2005 Sharepoint 2016 tutorial for beginners Ben Jonson in Ben Jonsons plays. Broken bride erin hunter Legends of the Field Learner differences and learning needs Aux.uncc.edu sites aux.uncc.edu files media s aux-info-guide. What is and what is not a practice? Counseling and therapy for couples 2nd edition Always hungry david ludwig Psychological tests Politics of American government The art of being neighborly 12. Final Decisions and surprises History of English literature (600-1900) Price, H. H. Belief and evidence. V.5: Assessing performance of integrated delivery systems David R. Nerenz, Barry M. Zajac. Muslims and Non-Muslims Face to Face The Rover Boys on a Hunt Now we can have a wedding! War and peace between Russia and Sweden, 1323-1809 : a chronology of border treaties Kaj Hober Napoleons Europe Star wars : Yoda : dark rendezvous*