

Fall 2019 Undergraduate Seminar

Department of Mathematics



Modular Hashing and the Collatz conjecture

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Date: Tuesday, October 22

Time: 12:00 - 12:50 pm

Location: Room 703, Thackeray Hall

Graham is an undergraduate computer science and mathematics major at the University of Pittsburgh. His main topics of interest are discrete mathematics and imperfect information games.



Choose a positive integer. If it is odd, multiply it by three and add one. If it is even, divide it by two. The Collatz conjecture is a decades old conjecture that states that for all positive integers, if you repeat this process, you will eventually reach one. In computer science, a hash function is a function that is used to map data values into organized “buckets”, so that the information in the buckets can be easily retrieved later. These two concepts are seemingly unrelated. In this talk, we will discuss a proof that shows that if a certain set of hash functions distribute given values over a certain number of buckets evenly, then the Collatz conjecture is false. Food and drinks will be provided!

SPEAKER(S) FOR NEXT WEEK:

Dr. Ermentrout



Organized by: Derek Orr, Tom Everest, Jeremiah Morgan, and Jeff Wheeler