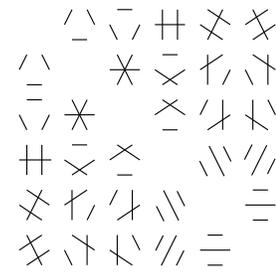


# Mathematics Seminar



## Rocky Mountain Algebraic Combinatorics Seminar

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### Proof Verification with Lurch

Kenneth G. Monks  
University of Scranton

Would your students benefit from an easy-to-use, open-source, web-based word processor that could check their assigned mathematical proofs? In this talk we introduce *Lurch*, our software project designed specifically for this purpose. In particular, we will discuss how *Lurch* was integrated into an undergraduate introduction to mathematical proof bridge course during the Spring 2024 semester. Additionally, we will explain how you can use this software and accompanying course materials, and customize it for your own purposes.

### (Meta) True about Everything

Kenneth G. Monks  
University of Scranton

How does *Lurch* verify proofs? In this talk we'll take a closer look at the theoretical foundations of the global  $n$ -compact validation algorithm developed for *Lurch*. While existing proof verification software (such as Lean, Isabelle, Coq, and Mizar) are powerful and effective, they often come with a steep learning curve and can be difficult to customize. We will explain how the custom *Lurch* validation algorithm overcomes these challenges, and pose some questions for future work.

Weber 223  
4–6 pm, Friday, August 30, 2024  
(Refreshments 3:30–4 pm)  
Colorado State University  
4 pm, Friday, August 30, 2024

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This is a joint Denver U / UC Boulder / U of Wyoming / CSU seminar that meets biweekly.  
Anyone interested is welcome to join us at a local restaurant for dinner after the talks.



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