

# Mechanization and Mathematical Research

15- 19 September 2025

## Description and aims

This workshop was not a technical conference, but a forum for the mathematical community to reflect on its future in light of the rapid automation of the deductive process. It convened a diverse group of research mathematicians, computer scientists, engineers, historians, philosophers, and social scientists.

## Programme

The five-day workshop combined expert lectures with panel discussions centered on foundational questions such as "What counts as a proof?" and "Who counts as a mathematician?" and "Why do we do mathematics?". A significant portion of the week was dedicated to structured breakout sessions following the "conversation café" method to ensure all participants contributed to them. A final breakout session on Friday asked participants to come with key takeaways to be shared with the broader mathematical community, see below.

## Tangible outcomes

The week concluded with a public symposium chaired by Robbert Dijkgraaf. It was aimed at engaging the broader mathematical community in the discussion. The symposium was attended by over 150 participants, and recordings have been shared on YouTube.

The breakout sessions on Friday produced a set of concrete actions, recommendations, and open questions for the mathematical community. These will form the basis for a follow-up publication by the workshop organisers.

In parallel, a writing group has been formed which is currently drafting a *Leiden declaration on the use of AI in mathematical research*, in consultation with workshop participants and the broader mathematical community.

## Organizers

- Johan Commelin (Utrecht University & LEAN FRO)
- Mateja Jamnik (Cambridge University)
- Rodrigo Ochigame (Leiden University)
- Lenny Taelman (University of Amsterdam)
- Akshay Venkatesh (Institute for Advanced Study, Princeton)