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Erdős Problems and speculations about the power of AI models

Paul Erdős was a Hungarian mathematician with a remarkable talent for formulating challenging open problems across many areas of mathematics. Several of these problems have recently been resolved either with the assistance of AI systems or, in some cases, through work carried out independently by such models.

I will discuss a number of examples, with particular emphasis on the recent solution of the Unit Distance Problem by an internal model of OpenAI. This problem has long been regarded as one of the central open questions in discrete geometry and was among Erdős's favorite problems.

Motivated by these developments, I will also speculate on the future capabilities of AI models and their expected impact on mathematical research.

The technical aspects of the lecture will be kept light, and no substantial mathematical background will be assumed.