



The Department of Mathematics

cordially invites you for a talk

“Mathematics and AI”

by

**Professor John Abela
ICT University of Malta
(AI Expert and Enthusiast)**

Date: Tuesday 27th October 2026

Time: 9:00 am

Venue: Room 410 Maths & Physics Building

Abstracts are available on request. <http://staff.um.edu.mt/isci1/>

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AI and the Mathematics

Must a mathematical proof be simple enough for humans to discover and understand? Recent advances in artificial intelligence give this question immediate significance. Reported solutions to previously open problems—including OpenAI's announced resolution of a formulation of the Navier–Stokes Millennium Prize Problem—invite us to reconsider the relationship between human ingenuity, computational resources and mathematical discovery.

This talk explores that relationship through selected examples of AI-assisted proof and algorithm discovery. Kolmogorov complexity provides a conceptual framework for distinguishing the length of a solution's shortest description from the difficulty of finding it. A compact proof may elude human search, while a more elaborate argument may contain insights that we struggle to comprehend. Could AI expand the range of mathematical ideas and methods accessible to us?

The discussion considers how learned mathematical knowledge, computational search and coordinated AI systems might contribute to solving problems and developing new mathematics. What opportunities arise when mathematicians can direct these systems towards conjectures, constructions and connections that have resisted existing approaches?

Looking ahead, I argue that the next three to five years could be exceptionally exciting for mathematics. Increasingly capable models, orchestrated to explore complementary approaches and guided by mathematical judgement, may help resolve further open problems and reveal new directions for research. These developments could give mathematicians unprecedented opportunities to formulate questions, uncover structures and build understanding. Now is an exciting time to be a mathematician.