

## Generative AI as a Cognitive Partner in Math Education

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### **Abstract:**

The rapid integration of Generative Artificial Intelligence (GAI) is reshaping mathematics education, particularly in calculus. This presentation explores its impact on learning objectives, pedagogical strategies, and curriculum design of calculus education. We stress the need to:

- Strengthen conceptual understanding and mastery of essential skills,
- Develop higher-level thinking and critical evaluation of AI-generated solutions,
- Leverage GAI as a dynamic learning aid to enhance problem-solving and personalized instruction, rather than relying on it for shortcuts.

We will share practical ways to create engaging curriculum activities, assessments, and evaluations that harness GAI's potential to enrich authentic learning experiences while maintaining academic rigor.