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Teaching Mathematical and Computational Finance with Generative AI: What Should Students Be Able to Do Independently?

In mathematical and computational finance, students learn to translate financial questions into mathematical models, implement those models, and interpret the results. When generative AI can produce a working implementation from a short prompt, what should students still be able to do independently, and how can an instructor tell? I consider these questions through an example from option pricing. A simulation can produce a plausible price with a narrow confidence interval even when the underlying asset has been simulated under the wrong probability measure. What would a student need to understand to recognize and correct the error? Drawing on my experience teaching mathematical and computational finance, I discuss how an assignment built around this example could combine AI-assisted implementation with an independent explanation of the modelling assumptions. I close by considering which skills a mathematical finance curriculum should develop before students are asked to evaluate AI-generated work.