Title: Mathematics and AI - a survey of use cases

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Abstract: In this talk I will relate current research and ongoing projects which utilize AI. One problem is machine-reading documents. I will outline a research project with the College of Medicine which has the potential of saving 30,000 lives a year by streamlining processing of documents used in the US organ transplant system. An essential component is the use of Optical Character Recognition (OCR), a well-established branch of AI, to retrieve text from scanned images. The rise of Large Language Models (LLMs) in the past year (6 months, really) is also a focus of our attention, and we are looking at using it to read natual language used by doctors and nurses in medical forms, containing data which can only be retrieved by LLMs. I also will describe how we use the U of A High Performance Computing (HPC) resources in our projects.