Ways and Means Committee
HOUSE BILL 1297

Education - Artificial Intelligence - Guidelines and Pilot Program

February 28, 2024

Chair Atterbeary, Vice Chair Wilkins, and committee members, my name is Tim Finin, and I am a Professor of Computer Science and Electrical Engineering at UMBC. I am pleased to be able to testify in support of House Bill 1297, introduced by Delegate Young. The passage of this bill would reflect leadership in the country-wide efforts addressing the societal impacts of using artificial intelligence (AI) systems, especially in government.

I am a professor in UMBC's Computer Science and Electrical Engineering department and have also held positions at Unisys, the University of Pennsylvania, Johns Hopkins University, and the MIT AI Laboratory. I have over 50 years of experience teaching AI and applying its technology to problems in information systems, cybersecurity, healthcare, and language understanding.

This testimony is written jointly with Vandana Janeja, Professor of Information Systems, Associate Dean for Research and Faculty Development in the College of Engineering and Information Technology at UMBC. She has been an educator and researcher in data analytics for over 16 years. She has co-authored community reports for the National Science Foundation and co-organized a workshop on embedding ethics in the data science pedagogy. She has also served as an AAAS Science Technology Policy fellow and a data science expert at NSF in the Computer Information Science and Engineering Directorate's Office of the Assistant Director.

In this written testimony, we outline our support for this bill regarding the increased use of AI in education. As experts, we believe that this bill's goals of developing and updating best practices on AI for county boards of education and creating a pilot program to support the implementation of these strategies are critical in this time of rapid AI technological advances.

Increased use of AI and the need to consider education efforts

With the advances in data collection, capturing, and sensing, we live in a constant deluge of data. Several disparate and rich data sources are emerging to help with actionable knowledge discovery. While the data often proves challenging to work with, it is also an opportunity to tap into relevant datasets to discover yet unknown patterns and support data-driven decision making. Indeed, AI-based systems are in use in our own backyards to support our communities (e.g., MD COVID-19 pandemic response, DHS program to improve flood resiliency, UMBC's Flood Bot project in Ellicott City, filling supply chain gaps with AI). AI and data-driven systems are also coming into play for consequential decision-making impacting lives and livelihoods (e.g., MD courts using AI systems for bail decisions, facial recognition in Capital Gazette shooting, ICE facial recognition searches). With technological advances now enabling the incorporation and systematic pattern

analysis of data at scales using machine learning beyond human perception, we must revisit how we view our work as part of a complex ecosystem filled with feedback loops. Our education system and efforts to educate the K-12 population are at the forefront of these changes in how we interface with technological systems.

Benefits and Pitfalls of using AI-based systems

AI-based systems, developed using machine learning and statistics, are beneficial when done well. These systems can lead to substantial efficiency benefits in terms of the speed, cost, and scalability of decision-making compared to human decision-making, and they often lead to better and more reliable decisions since the same procedure is applied evenhandedly to all data.

On the other hand, there are potential problems. Well-known cases of AI bias include racial bias in bail and sentencing decisions from criminal recidivism risk prediction systems and the inaccuracy of computer vision systems due to gender and skin tone with potentially harmful impacts for individuals impacted and also for society as a whole. The new statistical large language model systems like ChatGPT are prone to "hallucinate" false facts and include them in their output. They can also learn social bias and misinformation that is present in their training data.

Opportunities and challenges for education

We need to make our next generation aware of both the pitfalls and benefits, and the first step in learning starts with our teachers. Thus, we must support curriculum efforts and our teachers with appropriate professional development and make them aware of these benefits and risks as they train our next-generation citizens.

Indeed, national guidelines for AI education for K-12 have made progress in this direction and should be embedded into the local education systems. An online curated resource directory can facilitate AI education and provide a community of practitioners and researchers. AI can also help teach important concepts in an engaging manner, such as local environmental challenges. While these tools can be very beneficial, teachers and their students need a basic understanding of their development, the inherent limitations of these AI systems, and how to use them effectively. Maryland can lead in developing and adopting best practices in this new frontier.

Considering the far-reaching implications of AI-based systems, which may cause harm if not supported with the proper best practices, we appreciate your favorable consideration of HB 1297, which will help scaffold the future of our students as they learn about AI with an informed set of best practices and trained teachers who themselves can take advantage of efficiencies from AI-based tools but also will need to know how to establish guardrails in their classrooms as students explore AI-based tools and technologies. We appreciate your favorable consideration for HB 1297.