CAI: Computing: Artificial Intelligence

Courses

CAI 4802 Artificial Intelligence and Machine Learning for Cybersecurity
College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

As Artificial Intelligence is being used in our daily activities, it is imperative to be aware of their capabilities and application to address existing and emerging cybersecurity threats. This course will provide an introduction of Artificial intelligence, cybersecurity threats, machine learning and how AI applications are developed using real world datasets to address cybersecurity related problems. Topics will include but not limited to supervised and unsupervised machine learning techniques, and application of AI in solving cybersecurity related problems such as anomaly, spam email and malware detection. The course will be using hands-on practices using Google Colab environment where learners will be practicing how machine learning applications are developed and tested. Learners will be able to evaluate performance of AI applications using various metrics. The course will cover data preprocessing, AI risks and misuses, mitigation, and best practices. Students from BSIT, BSCS, BSCyber, or similar background; Earlier experience in a programming language but not required.

CAI 4930 Emerging Trends in Artificial Intelligence
College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

This course covers an introduction to and applications of Artificial Intelligence (AI). Topics include but are not limited to the history and evolution of AI, the technical AI applications in domains such as healthcare, supply chain, business, transportation, law enforcement, arts and creative works, and social well-being. The course discusses new AI trends and opportunities, including Generative AI, Large Language Models, such as ChatGPT, and prompt engineering for improved productivity. It also covers AI technology best practices, ethics, and risks. The course is intended for anyone interested in AI and its applications and benefits to improve daily activities, processes, and productivity. Offered concurrently with CAI 5931. Graduate students will be assigned additional work. Open to students from any major, no prior background in AI required.

CAI 5931 Emerging Trends in Artificial Intelligence
College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

This course covers an introduction to and applications of Artificial Intelligence (AI). Topics include but are not limited to the history and evolution of AI, the technical AI applications in domains such as healthcare, supply chain, business, transportation, law enforcement, arts and creative works, and social well-being. The course discusses new AI trends and opportunities, including Generative AI, Large Language Models, such as ChatGPT, and prompt engineering for improved productivity. It also covers AI technology best practices, ethics, and risks. The course is intended for anyone interested in AI and its applications and benefits to improve daily activities, processes, and productivity. Offered concurrently with CAI 4930. Graduate students will be assigned additional work. Background requirements: Open to students from any major, no prior background in AI required.

CAI 6804 Artificial Intelligence and Machine Learning for Cybersecurity
College of Sci and Engineering, Department of Cybersecurity & Info Tech

3 sh (may not be repeated for credit)

As artificial intelligence (AI) is being used in our daily activities, it is imperative to be aware of the capabilities and application to address existing and emerging cybersecurity threats. This course will provide an introduction of AI, cybersecurity threats, machine learning (ML), and how AI applications are developed using real-world datasets to address cybersecurity-related problems. Topics will include but are not limited to supervised and unsupervised ML techniques and the application of AI in solving cybersecurity-related problems such as anomaly, spam email, and malware detection. The course will be using hands-on practices using Google Colab environment where learners will be practicing how ML applications are developed and tested. Learners will be able to evaluate the performance of AI applications using various metrics. The course will cover data preprocessing, AI risks and misuses, mitigation, and best practices. Background requirements: Graduate students from MSIT, MSCS, MSCyber, PhD ISR, or similar background; Earlier experience in a programming language preferred but not required.