Artificial Intelligence & Automation Pathway

Core Courses

CompTIA Network+ | 72 hours

CompTIA Security+ | 72 hours

Automation with Python | 72 hours

AWS Solution Architect (Associate) | 72 hours

UiPath Citizen Developer Foundation | 72 hours

UiPath RPA Developer Associate (UiRPA) | 72 hours

UiPath Advanced RPA Developer (UiARD) | 72 hours

Introduction to Artificial Intelligence and Machine Learning (AI/ML) | 72 hours

Blockchain & Cryptocurrency Fundamentals | 72 hours

Splunk Core Fundamental User | 72 hours

Total AIA Pathway Clock Hours | 720 hours

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EXCELLENCE THROUGH EDUCATION

Program Prerequisites

High School Diploma and basic computer knowledge

Educational Objectives

Artificial Intelligence and Machine Learning (AI/ML) and Automation is transforming how we live, work and play. By enabling new technologies, like self-driving cars and recommender systems or improving old ones like medical diagnostics and search engines, the demand for expertise in AI and machine learning is growing rapidly. Automation combines the right technologies to automate, simplify, discover, design, measure and manage workflows and processes across the organization. It starts with robotic process automation (RPA) at its core, and expands automation capability with artificial intelligence (AI), process mining, analytics, and other advanced tools.

The AI & Automation (AIA) Career Pathway is a hands-on technical, 720 clock-hour program with a cohesive and progressive set of learning outcomes. In this program, students will get a solid introduction to the building blocks and components of artificial intelligence, and learn about concepts like algorithms, machine learning and neural networks. Students will also explore how AI is already being used and evaluate problem areas of AI, such as bias. Students will learn the concepts of cyber security, networking and Python programming. Through hands-on projects, students gain exposure to the theory behind graph search algorithms, classification, optimization, reinforcement learning, Blockchain, Cryptocurrency and other topics in artificial intelligence and machine learning as they incorporate them into their own Python programs. The course will also teach the students how to build automations using UiPath Robotic Process Automation software (RPA). By the end of the program, students emerge with experience in libraries for machine learning, as well as knowledge of automation that enables them to build attended and unattended bots on their own.

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Learning Outcomes

- Utilize methods of machine learning and deep learning to build and run analytical models and neural networks.
- Apply natural language processing techniques to speech recognition, semantic processing, text classification, and analysis.
- Process image data for visual exploration, image classification, remote sensing, and facial recognition.
- Utilize automated systems for robotics applications with special emphasis on reinforcement learning and the training of robots to mimic human behavior.
- Understand how to address the fundamental issues and challenges of ML/DL
- Develop a high-level understanding of the strengths and weaknesses of specific ML/DL approaches.
- Develop and apply explainable models for: target detection; pattern identification; combat diagnostics; anticipatory intelligence; and/or automated information extraction.
- Learn how to use Splunk and Machine Learning Toolkit to search, correlate and visualize events across multiple data sources.
- Learn how to build automations using UiPath RPA software.
- Learn how to use Document Understanding, Process Mining, Task Mining and AI Center in the Automation Lifecycle.

Professional Objectives

- Data Science Engineer
- Data Scientist
- Machine Learning Engineer
- Director of Analytics
- Computer Vision Engineer
- RPA Automation Developer

- Process Automation Specialist
- Splunk Power User
- Blockchain Engineer
- Cloud AI / ML Specialist
- Python Automation Developer
- Robotic Process Automation Architect

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State Council of Higher Education for Virginia

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