9/27/2024

ECE Guided MS Curriculum for the AI/ML Track

The suggested curriculum below is an example path designed to guide students interested in aritificial intellegence and machine learning. You are NOT required to follow this recommendation. Depending on your undergraduate major and/or industry experience (working experience in artificial intelligence or machine learning), you may take a different sequence of courses.

Please note that the recommended courses may not always be available in the semester specified. CS courses also have limited spaces for non-CS students, so these CS courses might use waitlists or not have any open slots during registration. If these courses are not available, you are always welcome to consult with your faculty advisor on your alternative course selection.

Suggested Pathway					
Class Number	*Class Title*	*Class Number*	*Class Title*	*Class Number*	*Class Title*
Fall 1		**Spring**		**Fall 2**	
EC602	Design by Software	EC523	Deep Learning	EC525	Optimization for Machine Learning
EC503 or CS542	Learning from Data or Machine Learning	EC504	Advanced Data Structures & Algorithms	Interest Dependent Course*	
Interest Dependent Course*		Interest Dependent Course*		Interest Dependent Course*	

* Students can take the following interest dependent courses based on their interest

**Underlined courses can also be used toward the ENG Data Analytics Specialization

Fall Interest Dependent Courses

Applications:

- EC717: Image Reconstruction and Restoration
- EC720: Digital Video Processing
- CS505: Introduction to Natural Language Processing

Hardware & Cloud:

- EC528: Cloud Computing

Theory:

- EC500: Foundations of Probabilistic Machine Learning
- EC517: Introduction to Information Theory
- EC700: High-Dimensional Probability

Spring Interest Dependent Courses

Applications:

- EC500: Medical Image Analysis using AI tools
- EC518: Robot Learning
- EC520: Digital Image Processing and Communication
- EC717: Image Reconstruction and Restoration
- CS585: Image and Video Computing

Hardware & Cloud:

- EC527: High Performance Programming with Multicore & GPUs

Theory:

- EC700: Reinforcement Learning
- EC719: Statistical Learning Theory