

MACHINE LEARNING COURSES AND CERTIFICATE OF COMPLETION

Overview:

Center for Mathematics and Artificial Intelligence (CMAI), Department of Mathematical Sciences, and several companies such as BlackSky etc. have jointly developed two new courses under Department of Mathematical Sciences for Fall 2021. These courses are cross listed and can be taken by undergraduates, graduate students and industry professionals.

The courses will provide mathematical foundation of deep learning and hands-on experience on industry applications. Special emphasis is given to the basics of optimization algorithms, stochastic optimization, and probability in the context of deep learning. These courses will incorporate modern tools such as Python or MATLAB. They also include industrial applications in satellite imagery, physics, and engineering.

Courses:

Math 462 / Math 662: Mathematics of Machine Learning with Industrial Applications - I

Math 463 / Math 663: Mathematics of Machine Learning with Industrial Applications - II

Targeted audience:

Undergraduates: register for Math 462 and Math 463 (Pre-requisites: Math 203, Math 213, CS 112 or permission of the instructor)

Graduate students: Math 662 and Math 663

Industry professionals or non-GMU students: Apply and register as non-degree students

Certificate:

A *certificate of completion* will be provided by the CMAI upon successful completion of the courses listing the skills gained. Collaborations with companies may create job/internship opportunities for the students.

Timelines:

Math 462 / Math 662: August 23 – October 11, 2021 (**7.5 weeks**)

Math 463 / Math 663: October 18 – December 8, 2021 (**7.5 weeks**)

Credits: Each course is worth 2 standard GMU credits

Instructor:

Prof. Harbir Antil

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Occasionally, we plan to have special lectures from industry professionals

Meeting Time: In-person meeting will take place on Wednesdays from 7:20–10:00pm. However, students can take courses in a fully virtual format (via zoom) as well. In addition, there will be one virtual hour every week.

Supported by:

