Master of Science in Machine Learning

Transform Your Career With Machine Learning Mastery

The online Master of Science in Machine Learning from Milwaukee School of Engineering is an exciting opportunity to develop advanced skills in machine learning and artificial intelligence (AI) technology. With a focus on the application of machine learning to industrial problems, as well as the development and deployment of machine learning-based products, MSOE's online program is unique among current educational offerings in this space. Through this program, you immediately apply what you learn in class to your current work, boosting your value and leadership abilities well before graduation.

MSOE is a distinguished leader in the area of machine learning and applications of AI. Join us online to master the skills necessary to develop and deploy machine learning solutions in your technical field.

PROGRAM STRUCTURE AND HIGHLIGHTS

- Offered 100% online
- Synchronous classes
- 32 credits to completion
- Choose from full-time and part-time tracks
- Apply credits from Graduate Certificate in Applied Machine Learning toward master's program
- Learn directly from student-oriented faculty who are experts in machine learning

ADMISSIONS REQUIREMENTS

- Technical bachelor's degree
- Programming experience with a modern language such as Python, C# or Java—one year of college course work or equivalent minimum
  - *Those with less experience will be encouraged to take CSC 5120—Software Development for Machine Learning*
- Minimum one year of differential and integral calculus required—multivariable calculus or linear algebra preferred
- Resume/CV

Programs Outcomes

MSOE'S MACHINE LEARNING MASTER'S PROGRAM WILL PREPARE YOU TO:

- Be the lead architect on complex projects involving machine learning and data science
- Analyze complex problems involving advanced applications of machine learning and data science and design solutions that meet relevant business, technical and ethical standards
- Apply a rigorous, scientific approach that includes forming research questions, generating hypotheses, designing and executing experiments and evaluating results to make informed judgments
- Effectively evaluate and utilize state-of-the-art software and parallel computing hardware in the design and implementation of projects
- Effectively describe solutions and their implications and communicate results to technical and non-technical audiences
- Successfully deploy production-quality solutions involving machine learning and data science techniques using current best practices

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The Curriculum

Each course in the online Master of Science in Machine Learning goes in-depth on theory and application of a different essential aspect of machine learning.

REQUIRED COURSES (28 CREDITS)

CSC 5201	**MICROSERVICES AND CLOUD COMPUTING** (4 CREDITS)
CSC 5610	**AI TOOLS AND PARADIGMS** (4 CREDITS)
CSC 6605	**MACHINE LEARNING PRODUCTION SYSTEMS** (4 CREDITS)
CSC 6621	**APPLIED MACHINE LEARNING** (4 CREDITS)
CSC 7901	**MACHINE LEARNING CAPSTONE** (4 CREDITS)
MTH 5810	**MATHEMATICAL METHODS FOR LEARNING** (4 CREDITS)
PHL 6001	**AI ETHICS AND GOVERNANCE** (4 CREDITS)

ELECTIVES (4 CREDITS)

CSC 5601	**THEORY OF MACHINE LEARNING** (4 CREDITS)
CSC 5611	**DEEP LEARNING** (4 CREDITS)
CSC 5651	**DEEP LEARNING IN SIGNAL PROCESSING** (4 CREDITS)
CSC 5421	**GPU PROGRAMMING** (4 CREDITS)
CSC 5980	**TOPICS IN COMPUTER SCIENCE** (VARIABLE CREDITS)
CSC 6999	**COMPUTER SCIENCE INDEPENDENT STUDY** (VARIABLE CREDITS)

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Meet the Faculty Leads

RJ Nowling, Ph.D.
Program Director, Graduate Certificate in Applied Machine Learning

Dr. RJ Nowling is an *assistant professor of computer science and director of the machine learning certificate* at MSOE. In collaboration with students and external research groups, he applies machine learning and data science to genomic data with the goal of extracting interpretable knowledge. Prior to joining MSOE, Dr. Nowling worked on applications of machine learning into web services at companies like Red Hat and AdRoll. Dr. Nowling earned a Ph.D. in Computer Science and Engineering from the University of Notre Dame and a B.S. in Computer Science and Mathematics from Eckerd College. He teachers courses in data science, machine learning and algorithms.

Eric Durant, Ph.D., MBA, P.E.
Program Director, Master of Science in Machine Learning

Dr. Eric Durant is a *professor and director of the machine learning program* at MSOE. He also served for 16 years as director of MSOE's computer engineering program. Dr. Durant researches the use of real-time audio processing with a focus on hearing aids, artificial intelligence and deep learning. He also has researched genetic algorithms to efficiently fit audio processing parameters in hearing aids, robust perceptual rank inferencing, beamforming, convex optimization and spatialization. He works regularly with Starkey Hearing Technologies as a senior digital signal processing (DSP) research engineer II and was a visiting professor at NVIDIA.
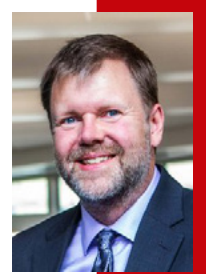
Grow your knowledge. Strengthen your career.

MSOE's focus on the application of machine learning to industrial problems and the development and deployment of machine learning-based products will set you apart in your industry.

To learn more about the online Master of Science in Machine Learning program, get in touch with admissions via email at **grad@msoe.edu** or by phone at **414-277-7331**.

Or, if you're ready to apply, get started on your application. **Apply here**.