

HARNESSING ARTIFICIAL INTELLIGENCE

Harnessing Artificial Intelligence (AI) is a top DOD priority. With this course, you will understand the principles and limitations of AI systems, and the benefits and risks of using them in military operations.

LEARNING OBJECTIVES

- To understand the nature and history of AI systems.
- To understand the kinds of AI systems that exist, their military applications, their strengths, their vulnerabilities, their strategic value, and their risks.
- To understand the four bedrock principles of AI in the military and apply them to AI projects.
- To think critically about AI, distinguishing hype from reality.

LECTURES

Each session will be a 5-minute introduction, 30-minute lecture, and 15-minute Q&A covering varied aspects of Artificial Intelligence, including:

- What is AI?
- Classifying AI by Type of Learning
- Critical Domains
- Moving Forward/AI Futures

Course: CS4000 / Harnessing Artificial Intelligence

Quarter: Fall AY2020 (Sept. 2019)

Credits: 0-2

Scheduling: M+W 1200-1300, IN-122

Grading: Pass-Fail

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NAVAL
POSTGRADUATE
SCHOOL



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TENTATIVE SCHEDULE

What is AI?

Sept. 30 - Origins and history (P.Denning)

Oct. 2 - Hierarchy of AI machines (P.Denning)

Classifying Machines by Kinds of Learning

Oct. 7 - Automation (J. Kroll)

Oct. 9 - Rule Based AI (V. Monaco)

Oct. 15 - (SHIFT DAY) Supervised Learning AI (M. Orescanin)

Oct 16 - Unsupervised Learning AI (C. Darken)

Oct 21 - Human-Machine Teaming AI (R. Darken)

Oct 23 - Aspirational AI (N. Rowe)

Critical Domains

Oct. 28 - Data Science and AI (R. Dell)

Oct. 30 - Management and AI (U. Apte)

Nov. 4 - Computer Vision and AI (M. Kolsch)

Nov. 6 - Cyber Security and AI (B. Hale)

Nov. 13 - Natural Language and AI (N. Rowe)

Nov. 18 - Robotics and AI (B. Bingham)

Nov. 20 - Ethics and AI (B. J. Strawser)

Moving Forward

Nov. 25 - AI and strategy (W. Huntley)

Nov. 27 - Risks of AI systems (N. Rowe)

Dec. 2 - AI in the DOD (B. Michael)

Dec. 4 - The New Face of Battle (J. Arquilla)

Conclusion

Dec. 9 - Conclusions (P.Denning)

