# Learning Machine Learning

* **Foundational Courses:**
  + **[Introduction to Artificial Intelligence](bear://x-callback-url/open-note?title=Introduction%20to%20Artificial%20Intelligence):** Overview of AI, history, and current state of the field.
  + **[Mathematics for AI](bear://x-callback-url/open-note?title=Mathematics%20for%20AI):** Topics include linear algebra, calculus, probability, and statistics.
  + **[Programming for AI](bear://x-callback-url/open-note?title=Programming%20for%20AI):** Focused on programming languages and tools commonly used in AI, like Python, TensorFlow, and PyTorch.
  + **[Data Structures and Algorithms in AI](bear://x-callback-url/open-note?title=Data%20Structures%20and%20Algorithms%20in%20AI):** Essential for understanding how to efficiently handle data in AI applications.
  + **[Languages for AI](bear://x-callback-url/open-note?title=Languages%20for%20AI)**: Understanding the landscape of current languages and their use cases (ie: Tensor flow, PyTorch, and R)
* **Core AI Courses:**
  + **[Machine Learning](bear://x-callback-url/open-note?title=Machine%20Learning):** Covers supervised, unsupervised, and reinforcement learning.
  + **[Deep Learning](bear://x-callback-url/open-note?title=Deep%20Learning):** Focuses on neural networks, convolutional neural networks (CNNs), and recurrent neural networks (RNNs).
  + **[Natural Language Processing (NLP)](bear://x-callback-url/open-note?title=Natural%20Language%20Processing%20%28NLP%29):** Techniques for processing and understanding human language.
  + **[Computer Vision](bear://x-callback-url/open-note?title=Computer%20Vision):** Methods for processing and interpreting visual data from the world.
  + **[Robotics and Autonomous Systems](bear://x-callback-url/open-note?title=Robotics%20and%20Autonomous%20Systems):** Principles of robotics, sensor integration, and autonomous decision making.
* **Advanced Topics:**
  + **~~Ethics in AI:~~** Understanding the ethical implications and responsibilities in AI development.
  + **[AI in Business and Society](bear://x-callback-url/open-note?title=AI%20in%20Business%20and%20Society):** How AI is changing various sectors like healthcare, finance, and transportation.
  + **[Advanced Machine Learning Models](bear://x-callback-url/open-note?title=Advanced%20Machine%20Learning%20Models):** More in-depth study of complex models and algorithms.
  + **[AI Systems Design and Architecture](bear://x-callback-url/open-note?title=AI%20Systems%20Design%20and%20Architecture):** Designing and managing large-scale AI systems.
* **Electives (to specialize in a particular area):**
  + [Reinforcement Learning](bear://x-callback-url/open-note?title=Reinforcement%20Learning)
  + **[Advanced NLP](bear://x-callback-url/open-note?title=Advanced%20NLP)**
  + [Quantum Computing for AI](bear://x-callback-url/open-note?title=Quantum%20Computing%20for%20AI)
  + **[Biometrics and AI](bear://x-callback-url/open-note?title=Biometrics%20and%20AI)**
  + **AI in Gaming**
  + **AI for Healthcare Applications**
* **Practical Experience:**
  + **Projects:** Hands-on projects to apply AI concepts to real-world problems.
  + **Internships:** Opportunities to work in industry or research settings.
  + **Capstone Project/Thesis:** A significant project or research work that showcases the student's mastery of AI topics.
* **Seminars and Workshops:**
  + Regular seminars by industry experts and researchers to keep students abreast of the latest developments in AI.
* **Research Methodology:**
  + Training in how to conduct AI research, including study design, data collection, and analysis.

## More to Checkout

[Artificial Intelligence Research | Department of Computer Science](https://www.cs.utexas.edu/research/artificial-intelligence)

[UTCS AI-Lab](https://www.cs.utexas.edu/~ai-lab/)

[Edge AI – System Level Design](https://radum.ece.utexas.edu/edge-ai/)

[Case Studies in Machine Learning](bear://x-callback-url/open-note?title=Case%20Studies%20in%20Machine%20Learning)

[Planning, Search, and Reasoning Under Uncertainty](bear://x-callback-url/open-note?title=Planning%2C%20Search%2C%20and%20Reasoning%20Under%20Uncertainty)

[Robotics and Autonomous Systems](bear://x-callback-url/open-note?title=Robotics%20and%20Autonomous%20Systems)

#ai/development/machine-learning