Artificial Intelligence: Principle and Practice

Free 8-day workshop bringing you to the cutting-edge artificial intelligence theory and technique!

Lecture (1:00 - 1:50pm): interactive undergraduate-style lecture
Lab (2:00 - 2:50pm): hands-on engineering experience
Deep Dive (3:00 - 3:50pm): graduate-style paper and peer-focused discussion
Times may be adjusted per general student availability.

Day 1: **Oct. 4 / Oct. 5, 2021**

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We will study:

- Symbolic approaches
- Machine learning
- Neural networks and deep learning
- Computer vision
- Sequence modeling
- Natural language processing
- Reinforcement learning (including multi-agent RL)
- Human-level artificial intelligence
- AI safety and ethics

We will use:

- Python
- SciPy suite
- Jax

- PyTorch
- TensorFlow (python, tflite and tf.js)
- Huggingface
- OpenAI Gym
- PettingZoo
- TDW
- Docker
- Cload Compute

Student expectations:

- calculate the derivative of a function
- apply probability & statistics to toy problems
- write simple Python programs
- read 12 pages per class (for student attending the "Deep Dive")

If many students already have deeper roots in math, statistics, information theory, physics, biology, neuroscience, or psychology, we will discuss advanced principles of artificial intelligence engineering from those perspectives.

Course expectations:
❌ no homework
❌ no tests
❌ no costs (this course is free)
⚠️ **This course is not accredited by UTA**
✔️ individualized activities
✔️ machine learning
✔️ (most importantly) human learning

If your neurons have accumulated sufficient presynaptic evidence and your reward estimator feels like it's ready to explode, please join me on this exciting journey!

ps: (Much of this document was drafted using artificial intelligence.)