

CS3 RET Week 2 Day 4: Deep Learning Concepts

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Outline

- 1 Iteration
- 2 Epoch
- 3 Batch Size
- 4 Overfitting

Iteration in Deep Learning

- In deep learning, an iteration is one update of the model's parameters
- Daily life example: Learning to cook a new recipe
 - Each time you cook the dish, you make small adjustments
 - You're "updating the parameters" of your cooking technique
 - Over time, your dish improves through multiple iterations

Epoch in Deep Learning

- An epoch is one complete pass through the entire training dataset
- Daily life example: Reading a textbook to study for an exam
 - Reading the entire textbook once is like one epoch
 - You might read it multiple times to reinforce your understanding
 - Each complete read-through helps you learn the material better

Batch Size in Deep Learning

- Batch size is the number of training examples used in one iteration
- Daily life example: Doing laundry
 - Your laundry is your "dataset"
 - Batch size is how many clothes you put in one load
 - Smaller batches (loads) are faster but may be less efficient
 - Larger batches take longer but might be more thorough

Overfitting in Deep Learning

- Overfitting occurs when a model learns the training data too well
- Daily life example: Memorizing for a test
 - You memorize specific questions and answers
 - You perform well on those exact questions
 - But you struggle with new, slightly different questions
 - You've "overfitted" to the study material